A

TREATISE

OF

FRUIT-TREES.

By THOMAS HITT, K

GARDENER to the Right Honourable Lord
ROBERT MANNERS, at Bloxholme,
in Lincolnſhire.

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PREFACE.

I AM apprehenſive this treatiſe will meet with the fate of many others; that is, of being deſpiſed by ſome readers: for which reaſon, I think it neceſſary to make an apology, which, I hope, will obtain for it a more favourable reception than it might otherwiſe meet with.

AND let me excuſe myſelf to my Brother-Gardeners, thoſe who are well acquainted with the nature of Fruit-trees, leſt they ſhould think me like that celebrated prize-fighter who was always ready to take up a weapon againſt any perſon that durſt encounter with him; but I do not preſume to act in this manner, nor did I write with theſe vain expectations of being inſtructive to all Gardeners; and yet, I am hopeful, it will be of ſervice to ſuch young ones as are deſirous to improve themſelves. This publication was occaſioned and promoted by ſeveral gentlemen who like to ſpend ſome time in their gardens, and would gladly be enabled to judge if their Fruit-trees are properly pruned, or not; many of them declared to me that they thought the employment extremely pleaſant in temperate weather, and ſhould like to do many things themſelves, could they be certain their labour would be properly applied. I, indeed, thought my ſchool-education too narrow for ſuch an undertaking, but my friends perſuaded me, that polite expreſſions were not expected in ſuch a performance; and therefore, I flatter myſelf its rude ſtile will be excuſed by the learned reader.

I HAVE ſhewn by copper-plates the ſhapes that I train the ſeveral ſorts of Fruit-trees to; and have likewiſe given rules for the doing of it. Some of my words were changed by the Corrector of the Preſs, for others he thought more clear and proper: but I have carefully examined every ſheet, in time of printing, and declare, that my methods of ordering Fruit-trees are juſtly publiſhed, without either reſerve or addition, which was the thing deſired by my friends, who muſt know what ſucceſs hath attended my practice.

I HAVE not given any account what climate the ſeveral kinds of fruits were originally brought from; for that is known to the learned, and is not wanted by others.

BRITISH MUSEUM 55 APR

In the deſcription of fruits, I have omitted moſt of their foreign names, and only mentioned thoſe they are moſt commonly called, and are beſt known by in England; and, as to their time of ripening, that is adapted to the preſent ſtile, as is likewiſe all other parts of the work relating to time.

The catalogue of fruits is not indeed ſo large as ſome others; but it contains a ſufficient number of good ſorts for any ſmall garden. The deſcriptions of their ſhapes, colours, &c. I have not copied from other authors, but drawn them faithfully from the ſeveral fruits in perfection.

Almoſt all the ſorts are now under my care, at Bloxholm in Lincolnſhire, the ſeat of the right honourable lord Robert Manners: and at Belvoir-Caſtle, there was in the time of my apprenticeſhip at that place, a greater number of good ſorts than thoſe I have mentioned; the greateſt part of them having been ſent from abroad by the right honourable the earl of Stair to his late grace the duke of Rutland, and improved by his preſent grace, by adding other new and good ſorts, when they were to be met with. The greateſt part of my time I have had the honour to be a ſervant to ſome of that noble family, who are all ſo willing to encourage a perſon who deſires to improve his knowledge, that they never deſire he ſhould be ſo confined to labour, as to prevent his making proper obſervations on the works of nature. I now enjoy the like happineſs under his grace's brothers, by having the gardens of the right honourable lord Robert and Charles Manners committed to my care, under the direction of the right honourable lord James Manners, who has moſt leiſure-time to ſpend that way, and is very curious in his obſervations. They are all exceeding good maſters; for, I receive all the encouragement that one in my ſtation can reaſonably expect, and as much as I deſerve.

It may be proper to obſerve to my readers, that fruits do not ripen every year in the ſame months; for ſometimes they are fourteen days earlier, ſometimes as much later than the times I have mentioned; as appears by my memorandums for the years paſt. Nor muſt they be expected to ripen in all parts of England alike, for ſoils and climates make a conſiderable difference; for example, I have known, in about two degrees difference of latitude, that there has been a week's difference in the ripening of fruit.

As the fruits ripen in one climate earlier than another, the ſeaſons for pruning muſt vary accordingly; ſo the times I have mentioned for works to be done are very proper for the latitude of 54 deg. north; becauſe my practice has chiefly been within twenty miles of Newark upon Trent, and I have wrote according to obſervations made in that climate. For after I left the right honourable lord Robert Sutton, of Kelham (where I had been ſixteen years) I reſided moſt commonly in Lincolnſhire, or Nottinghamſhire; and before I ſerved my lord at Bloxholm, I was employed by ſeveral noblemen and gentlemen in Newark, either in dreſſing or giving directions to their gardeners, for the ordering of old Fruit-trees. But I found the latter practice diſagreeable to theſe gardeners; which cauſed me to refuſe meddling with any others but thoſe of my own planting.

After having made that reſolution, I was deſired, by my friends, to write upon the whole management of Fruit-trees, both old and young; with the nature of planting and ordering them. To encourage me to this undertaking, I had ſubſcriptions from many noblemen, gentlemen and ladies: and now I return every one my moſt humble thanks for the honour they did me. I am convinced my labour will be of ſervice to thoſe who follow all the rules; but it muſt not be expected that old trees will bear more fruit the firſt year after pruning than they did before; an improvement, however, may be viſible to any curious and impartial obſerver. Though the young wood procured by proper pruning will bear the firſt year in many kinds of trees; yet in others it will not till it be two or three years old, as I have mentioned in the rules for pruning.

Neither can a tree be much helped by mere cutting, unleſs the roots and borders in which they grow be uſed as directed; which work I am afraid will be neglected by ſeveral practitioners, who deſpiſe books, and take a pleaſure in rendering them uſeleſs to others; but there are many young men who love to read for the ſake of improvement, and to ſuch, I hope this work will be ſerviceable.

BRITISH MUSEUM 22 APR 55

INDEX.

ALMONDS, how raiſed Page 49
their ſhapes 59
how to prune and nail them 179
in eſpaliers 227
Ants, how to deſtroy them 281
Apples, ſtocks proper for them 51
their ſhapes in the nurſery 61
pruning them againſt a wall 150
in eſpaliers 222
in dwarfs 225
their kinds 293
Apricots, ſtocks proper for them 48
their ſhapes in the nurſery 59
pruning them 179
in eſpaliers 227
their kinds 295

Barberries 247
Bloſſoms preſerved from froſts 262
Borders, how to make them 6
how to keep them 252
how to improve old ones 255
Burning of clay 12
Bad Gardener, a loſs to gentlemen 139
Bloſſoms of grapes to preſerve 208
of Apricots, &c. 262

INDEX.

Catalogue of fruits 293
Caterpillars 265
Cherries, ſtocks for them 53
Cherries, their ſhapes in the nurſery 56
  pruning them againſt a wall 151
  in eſpaliers 226
  their kinds 297
Clay improved by fire 6
Currants againſt a wall 149
  ſtandards 241
Cutting of roots, &c. 72

Dung, bad for fruit-trees 14
Dwarf-trees, their ſhapes in the nurſery 64
  concaves 229
  horizontals 235
  convex 237
  cheſnuts, cherries 381

Eſpaliers 217

Figs, the catalogue 302
  ſoils proper for them 9
  their ſhapes in the nurſery 63
  pruning againſt a wall 213
  pruning in eſpaliers 225
Filberds in eſpaliers 225
  their kinds 302
Fruit-trees adapted for the walls in the firſt plate 20
  for the eſpaliers 27
  for various aſpects 31

Fruits

12 APR 55

Fruits thinning 183
  gathering 284
  how to preſerve them for winter 287
Froſts, detrimental to fruits 262

Gooſberries 241
Grapes, their kinds 305

Head of trees cutting at the time of planting 77
Honey-dews upon trees, and its ill effects prevented 272

Inſtruments proper to dreſs trees with 99

Medlars in the nurſery 56
  their kinds 311
Mulberries, their ſhapes in the nurſery 63
  pruning them againſt a wall 148
  pruning in eſpaliers 223
  their kinds 311
  ſtandards 380

Nailing a new planted tree with three branches, either a pear, plum or cherry 101
  the firſt ſummer 108
  the ſecond winter 111
  a new planted tree with one or two branches 119
  on peaches, nectarines, &c. the firſt year of planting 86
  a full grown tree 128
Nectarines, their kinds 312

Obſervations on the different ways of pruning pears, plums, &c. 86

INDEX.

Orchards improved 385

Packing up trees for long carriage 71
Planting wall or dwarf trees 81
Pears, plums, cherries, &c. with their plate III. explained; and pruning a pear, plum, cherry, or apple from its firſt planting till full-grown, either againſt a wall or an eſpalier 97
Plate IV. explained
Pruning a peach of different ages 155
their kinds 314
Pruning ſtandard pears 380
Plants – – – – – – [illegible] 344
Quinces in eſpaliers 225

Roots cutting at the time of removal 72
Raſberries 248

Salts ſerviceable to trees 14
Situations proper for fruit-trees 32
Soils proper for fruit-trees 1
Soils wet, how to improve them 3
Stocks proper for fruit-trees 44
Standard-trees, their ſhapes in the nurſery 66
pruning them 372
old, pruning them 376

Taking up trees 66
Thinning of fruits 183

Vines, the ſoil proper for them 3
their order in the nurſery 63

Vines

Vines planting 186
  pruning of all ages 189
  in eſpaliers 228
  ſtandards 238
  their kinds 305

Wet ſoils improved 3
Walls building 35
Wall-trees, their ſhapes required in the nurſery 57
Waſps and flies how to deſtroy them 281
Winter-fruits, how to preſerve them 287
Walnuts pruning 380

BRITISH MUSEUM
22 APR 55

Directions for the fixing of the PLATES.

Plate I. to be paſted to the margin of Page	20
II. to	34
III. to	96
IV. to	154
V. to	188
VI. to	212
VII. to	228

ERRATA.

Page	Line	
39	5.	*read* Apricots or Almonds.
	10.	ſhould end at Nectarines.
45	7.	*for* never, *read* ever.
64	1.	*for* ſtocks, *read* ſhapes.
74	22.	*for* top roots, *read* tap-roots.
71	5.	*for* Bollisford, *read* Botti-ford.
	6.	*read* all of them lived, and ſome bore fruit the firſt year.
99	14.	*for* above *read* about.
124	11.	*for* and 4, *read* Figure 4.
143	2.	*for* preparing, *read* improving.
284	15.	*for* of Bloſſoms, *read* or Bloſſoms.
297	22.	*for* milderſize, *read* middle ſize.
38[illegible]	1.	*for* burnt, *read* tranſplanted.

BRITISH MUSEUM
22 APR 55

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CHAP. I.

OBSERVATIONS on SOILS proper for FRUIT-TREES.

WHAT I ſhall advance concerning ſoils proper for fruit-trees is not a bare hypotheſis, but founded on various experiments I have made, both upon old and new planted trees, with good ſucceſs.

The ſoils in which I have found moſt kinds of fruit-trees to thrive and bear beſt, are either of a red, black, brown, or grey colour, of a ſtrong nature, more inclining to clay than ſand, to the depth of two feet; if more, not the worſe; not having either a ſharp ſand or ſprings beneath, but either a rock, marle, or a ſtrong clay, if it be tolerably dry.

The ſolid particles of clay are the ſmalleſt of any ſort of ſoil: ſo that in clay there is much matter and but little ſpace. It retains moiſture longer than ſand, whoſe ſolid parts are much larger, as well as the ſpaces betwixt them: through which too great a quantity of the ſaline juices quickly deſcend, and the lighteſt parts of them are eaſily attracted by the ſun's rays, by which in the ſummer the ſurface becomes too ſoon dry. Clay, though it retains moiſture longer, yet when 'tis very dry is ſo compact a body, that neither rain nor watering can eaſily penetrate it, but remain upon or near the ſurface in ſummer till attracted by the ſun, or carried off by the winds, and but little deſcends to the roots of vegetables: nor can the roots extend themſelves ſo eaſily in clay, as in ſoils more open and porous. Therefore, as ſand gives room for the roots to extend themſelves, and clay retains proper juices for them to abſorb, a mixture is better than either of them alone.

Any ſoil too wet is improper for fruit-trees, whether they are planted againſt walls, or are eſpaliers, dwarfs, or ſtandards. Cherry-trees are often killed by it, and apples, pears, &c. are covered with moſs, the extreme parts of their branches are cankered and die, and the fruit, if they bear any, is ſmall and ill taſted. Peaches, nectarines, and apricots, are very much hurt by it, and the trees if they live produce a ſpungy wood ſubject to blights, and unhealthy, and the fruit, if any, are inſipid. Vines and figs require a drier ſoil than any of theſe before mentioned; and I ſhall in another place ſhew how to prepare it.

CHAP. II.

Draining of Soils.

CLAY, or any wet ſoil, may be improved by draining; in order to which, for wall-trees, trenches may be made, about half a yard wide at the bottom, and one foot deeper than the borders are made, cloſe by the edge of the walks adjoining; theſe trenches being filled up within about half a yard of the top of the border, with either ſmall ſtones, pieces of bricks, faggots of black thorns, broom, or ling, &c. and covered with earth even with the other part of the border, will be a means to keep it dry.

I have ſeen trenches made cloſe by the walls, in order to drain land, but they anſwered not the end; for they were not of a ſufficient depth, neither could they be made deeper, without weakening the foundation: and as theſe trenches were ſo ſhallow, the roots of the trees were apt to ſtrike into them, which, being in winter generally filled with a ſharp running, and at other times in ſome parts with a cold ſtagnant water, (their bottoms not being made with a due deſcent) greatly injured the trees, and ſometimes killed them.

For, having an opportunity of ſeeing a tree that was dead, where theſe trenches were made, I examined the roots, and found the extreme parts of them covered with ſharp ſand; from whence I concluded, that the aforeſaid waters occaſioned its death.

To prevent water from ſtanding in the trenches or drains, they ought to be made with as much deſcent as poſſible towards that part of the ground which is loweſt: and if a garden be walled in and levelled, before this is thought on, the lands on the out-ſide muſt be examined, to find which is loweſt, and if there be any common water-courſe, the drains muſt point towards it, and if the garden be not levelled, it muſt be ſo laid out as to be above it, otherwiſe the drains will be of no ſervice.

In gardens, upon land of this ſort, it will be proper to have ſeveral of the firſt mentioned drains, whether they are pleaſure grounds, kitchen gardens, or orchards; for all lands that are very wet in the winter, are not fit to walk upon, neither for pleaſure nor buſineſs; beſides they loſe much of their ſaline juices; and if they be clay, are ſubject (if the ſeaſon is dry in the ſpring) to ſet very hard, whereby the ground becomes unfit for the reception of ſeeds and plants.

After land is drained in the manner before directed, at the time of making the borders, either for wall-trees, dwarfs, or eſpaliers, a mixture of earth ought to be made for them, no leſs than two feet deep.

CHAP. III.

Making of Borders for Peaches, Nectarines, Pears, Plums, Cherries, &c.

IF the land be a ſtrong clay, take ſea ſand, if it may be eaſily had, if not, any other ſand that is neareſt, and about one ſixth of the quantity of coal aſhes, that have been kept very dry; riddle them, but not too fine: for if ſome of the larger parts be left, they will diſunite the tough body of clay, and make it more open and tender, and the finer parts that are more burnt will add more ſalts to it.

But if aſhes cannot be had, take about a twelfth part as much lime as ſand. About a third part of the depth of the borders ought to be of theſe ingredients; and in trenching the borders, there muſt be a layer of theſe, and a layer of the natural ſoil, from the bottom to their ſurface, in the above proportion; but they ought to be turned over twice at leaſt before planting, in order to mix them the better.

If the ſoil of borders is mixt with large pebbles, they muſt be picked out, and may be of uſe (though otherwiſe hurtful) to lay in the drains.

And as this kind of land is generally of a looſe ſandy nature, it muſt be mixt with ſomething more ſtrong and binding, which is clay, the tougheſt that can be got, and neareſt. If it be taken from the ſides of ditches, whoſe ſoil is naturally a clay, or from ditches in which there is ſometimes a current of water falling from tillage fields of that kind of ſoil, and there leaves its ſediment, it will be as good as any.

At the bottom of the borders lay this clay ſix inches thick throughout, it will prevent the moiſture from running off too faſt in the ſummer, as it is apt to do from open ſandy ground, eſpecially where there are drains made as before directed; then to each cart-load of clay add three pecks of pigeon dung, or lime, or five of ſoot, and mix them with a quantity of the natural ſoil equal to half of them: if coal or wood aſhes are made uſe of inſtead of ſoot, they muſt be made very fine, otherwiſe they will open this ſort of land too much; beſides, the finer they are made, the more ſalts they add to it.

But where ſandy lands are dry, the draining part muſt be omitted; and the other ingredients only are to be made uſe of.

It may be ſaid, that trees will grow well upon ſandy land, without any improvement: I grant they will: but they are not ſo long lived, being more ſubject to blights, and the fruit is both ſmaller, and of a worſe taſte, than thoſe upon ſtronger ground inclining to clay.

If land deſigned for a garden is either hard rock or creach, and lies within the depth which the borders ought to be, let it be picked up and ſkreened to take out the ſtones; which will be of ſervice when laid under graſs or gravel walks; as they will be drier and leſs ſubject to worm ſprouts. Then as you find the land, after ſkreening, either light or ſtrong, add to it one of the mixtures which you ſee it wants, according to the former directions, to bring it to a proper depth, and a ſoil more inclining to clay than ſand, with a covering of ſtrong clay at the bottom ſix inches thick.

If the land be freſh and proper for fruit-trees, yet it ought to be trenched as deep as others; and if towards the top there be uſed a ſmall quantity of the ingredients mentioned before for the enriching of ſoils, it will be of good ſervice; for it muſt be noted, that in making the trenches, the worſt part of the ſoil will be uppermoſt.

If borders are to be planted with trees where others have grown before, the depth and quality of the ſoil muſt be examined, and if it be deep enough, and of a proper mixture of ſand and clay, then it only requires trenching with the former addition of lime or ſoot, &c. which will be a better border than if the old earth had been taken out, and freſh laid in without lime, &c. and alſo much cheaper.

In borders thus prepared to ſix feet wide or more (though 'tis proper to make the borders as wide as the walls are high) I have known all kinds of fruit-trees proſper well and bear excellent fruit, except vines and figs.

CHAP. IV.

On making of Borders for Vines and Figs.

THOUGH vines and figs will grow well on thoſe borders before mentioned, yet their fruit is not ſo good as on thoſe growing in a drier ſoil.

For at Belvoir caſtle, a ſeat belonging to his Grace the Duke of Rutland, there was a vine which bore a white muſcadine grape, growing out of the ſtony foundation of a wall, without any other roots than what were fixt therein, (for the border was taken away from the ſame wall in a ſloping manner many years before I ſaw it) and this vine produced better fruit, and earlier ripe, than any other of the ſame kind in theſe gardens, except thoſe planted againſt the ſtove walls. Fig-trees (as I have experienced) proſper and bear beſt when planted in a dry ſoil, with a rock near the ſurface.

Therefore, in trenching the borders for vines or fig-trees, the natural ſoil may be mixt with rubbiſh, as lime ſcraps, ſmall pieces of bricks, &c. for a foot deep in the bottom, or more; but if the land be of a creachy ſort, the lime ſcraps, pieces of bricks, &c. need not be uſed, but may be trenched with only the ſame quantity of ſoot, &c. added as in others.

In trenching of all borders, the roots of corn-bind, common thiſtle, and all other weeds whoſe roots ſtrike deep into the earth, muſt be carefully pickt out; but the roots of couch-graſs, &c. which float near the ſurface, may be buried in the bottom of the trenches, which will deſtroy them without any further trouble.

When theſe or any borders are firſt made, they ſhould be raiſed three or four inches higher than the height they are deſigned to be afterwards; for, in a year's time, they will ſettle ſo many inches or more; and thoſe that are ten feet broad, let them lie deſcending from the wall ſix inches, and others in proportion to their breadth

Note, where borders are made for vines only, four feet will be broad enough.

In ſome ſituations there is a white earth called marle, which has the ſame effect as ſoot, but muſt be uſed in larger quantities;

this earth is very fine and ſoft, and if mixt with water has a ſalt taſte.

If the former ingredients cannot be eaſily procured, then burnt clay may be uſed in a double quantity to that required of aſhes; and mixt with the earth, for borders, as other manures.

CHAP. V.

Of Burning of Clay for the Improvement of Land.

THE turf muſt be taken off from a piece of clay-ground, about two inches thick, with a breaſt-plough, and be reared up or turned till dry, then laid in heaps with faggots of furz or ling under them, in order to burn them; when they are red through with fire, throw upon each heap a barrow full of earth taken from ant-hills, pond-banks, or any other place where it may be beſt ſpared. Sometimes it happens that the clay laid on the fires is burnt into lumps, in ſuch caſe it muſt be beaten very ſmall with flails before it is uſed in borders.

Perhaps it may be thought by ſome, that taking off the turf and burning it will ſpoil much land; but the quantity pared will only be about twice as much as the borders contain; and for the reparation of the land thus pared, there may be taken from the places where the fires were made the depth of two inches of earth, which, with a ſmall part of the aſhes ſpread over the other parts of the ground, will make amends for the loſs of turf; and if it is ploughed and ſown with corn or turnips, and, after the crops are taken off, it be laid down with proper graſs ſeeds, it will not be worſe for meadow, or paſturing, than it was before paring.

'Tis manifeſt that fire has a wonderful effect upon land; for when it is burnt, by way of improvement, either to ſow with corn, rape-ſeed, or turnips, if all the aſhes be clean taken away, and part of the earth, from the places where the fires were made, yet theſe places may be eaſily diſtinguiſhed, by the crops growing much ſtronger upon them, and are of a darker green than the other parts, where the aſhes were ſpread; which ſhews that theſe places are more fertile than the reſt of the ground; and therefore 'tis plain, that land is improved by fire only, without the aſhes made of the turf.

CHAP. VI.

Shewing the different effects of Dung, freſh Earth, and Salts, uſed in Borders for Fruit-Trees, and other places.

I Doubt not but that it will be ſaid by many, that freſh earth, and rotten manure, are both cheaper and better for fruit-trees than what I recommend; but every reaſonable perſon will acknowledge, that the carriage of earth for the whole border will exceed the expence of the mixtures I have adviſed: and whoever obſerves the effect of both, will find the freſh earth and rotten dung not ſo good for fruit-trees as the other; eſpecially for peaches and nectarines; tho' they will make ſhoots as large or larger, yet not ſuch healthy ones, nor ſuch as will bear ſo early; for, being fed from ſoils too watery, (as this generally is) their upper parts are very porous, which the honey-dew adheres cloſely to, and either kills or damages thoſe parts that would otherwiſe have bloſſomed the next ſpring; and the lower parts of the branches have very long joints, and but few buds; and thoſe there are of a ſhape too flat for bloſſoming.

But when trees grow in a dry ſoil (mixt as before directed) their young branches will be found healthy at their upper ends, with ſuch buds as are of a ſort fit for bloſſoming; and the lower parts will be able to convey ſap from the roots to ſupport them.

The quantity of lime, aſhes, ſoot, &c. muſt not be greater than what I have mentioned; for as they are ſerviceable to vegetables when uſed in a proper quantity, ſo are they likewiſe deſtructive when uſed in too large a quantity, or when they are not well mixt with moiſt earth to dilute their ſalts, and bring them to a fit texture for the roots of trees to receive, without cutting or renting their pores, which they will do if applied too groſsly, either to the roots, leaves, or branches; for the ſalts in thoſe ingredients have angular particles, (even like very ſevere froſt) which renders the veſſels of plants incapable of retaining juices proper for their nouriſhment; for want of which many plants die, and then 'tis thought that ſuch ſalt manures are too hot: but it may with as good reaſon be imagined that froſt is too hot, for both are deſtructive in the ſame manner, i. e. by cutting and lacerating the veſſels.

To ſhew an acquaintance of mine the effects and advantages of ſalt properly applied to vegetables, I made the following experiment, in an extreme dry ſummer, upon a bare piece of paſture land, out of which the cattle were all taken for want of graſs. I markt four places with ſtakes, each of which I watered nine nights ſucceſſively in the following manner: the firſt with ſpring water alone, to the quantity of a gallon; the ſecond with the ſame quantity of water, adding an ounce of common ſalt; the third and fourth with the ſame quantity, mixing the water in the third place with two ounces of ſalt; and that in the fourth with three ounces, which produced the following different effects.

The graſs in the ſecond place grew more, and of a darker green, than that in the firſt; in the third it only grew by ſpots; for part of it was killed where the greateſt quantity of water fell; and the fourth was quite brown for a greater compaſs than the third: by which it appeared, that an ounce of ſalt in a gallon of water had a better effect than the water had alone; and that three ounces of ſalt mixt with a gallon of water was more than the graſs could immediately receive; but the fourth place in the enſuing ſpring was the moſt fertile of them all, which was owing to the winter's moiſture diluting the ſalts.

I ſhewed him alſo, in the ſame dry ſeaſon, a heap of aſhes where weeds had ſome ſmall time before been burnt, which was much moiſter in a morning by the dews than the ſoil near it, and continued ſo longer in the day: upon which he thought and declared, that aſhes were neither hot nor dry, but of qualities quite contrary; and that ſalt was of great ſervice to land, how dry ſoever, as appeared by the common ſalt and water uſed as before mentioned.

If what I have advanced with regard to ſalts, &c. appears not reaſonable to ſome perſons, I ſhall not contend with them, but leave them to their own opinions; only deſire, that they will inform me of what ſervice the freſh earth is to trees, any farther than by the ſalts therein contained, which it has at various times received from the excrements of cattle long paſturing upon its ſurface, the ſaline particles of which, deſcending to the roots of the graſs, render the earth more fertile, and for that reaſon is frequently made choice of for fruit-trees.

It has been evidently proved by Dr. Keil, that the growth of a tree very little leſſens the weight of the earth in which it grew; which difference of weight is purely owing to the greater quantity of ſalts contained in the earth when the tree was planted, than at the time of taking it up.

For admit the tree be taken up and burnt to charcoal, (in doing which a great part of its watery particles evaporate, and ſome of the fineſt ſaline parts) and the charcoal burnt to aſhes, in the aſhes there will be contained a large quantity of ſalts, which may be made apparent by pouring water upon them, draining it from them, and then boiling it to leſſen the quantity; after which the ſalt may be eaſily diſcovered by its taſte, and if it be ſeparated from the water and reduced to powder, its weight will not be much leſs than the difference between the weight of the earth when the tree was planted, and the weight thereof when it was taken up. But ſome difference muſt be reaſonably expected; for there is a ſalt found in ſoot, and conſequently part of its weight is carried off by ſmoke, whoſe heavieſt parts form that body, and the lighteſt are more watery; ſo that, after the plant is burnt and conſumed in manner aforeſaid, there are no marks of earth remaining.

CHAP. VII.

Of the ſeveral ſorts of Fruit-Trees deſigned for each Wall, in the 1ſt Plate.

IF the walls are twelve feet high, there are ſpaces allowed for the ſeveral kinds of trees, proportionable to their natural growth. That is, for a pear-tree grafted upon a free ſtock (or pear ſtock) to have 200 ſuperficial feet of walling.

A pear on a quince ſtock, an apple on a paradiſe ſtock, an apricot, an almond, a plum, or cherry of the ſtrongeſt kinds, a mulberry, and a fig, to have each of them 150 ſuperficial feet of walling.

A peach, a nectarine, a morello cherry, the barran dam, and ſmall May cherry, to have each of them 120 feet of ſuperficial walling.

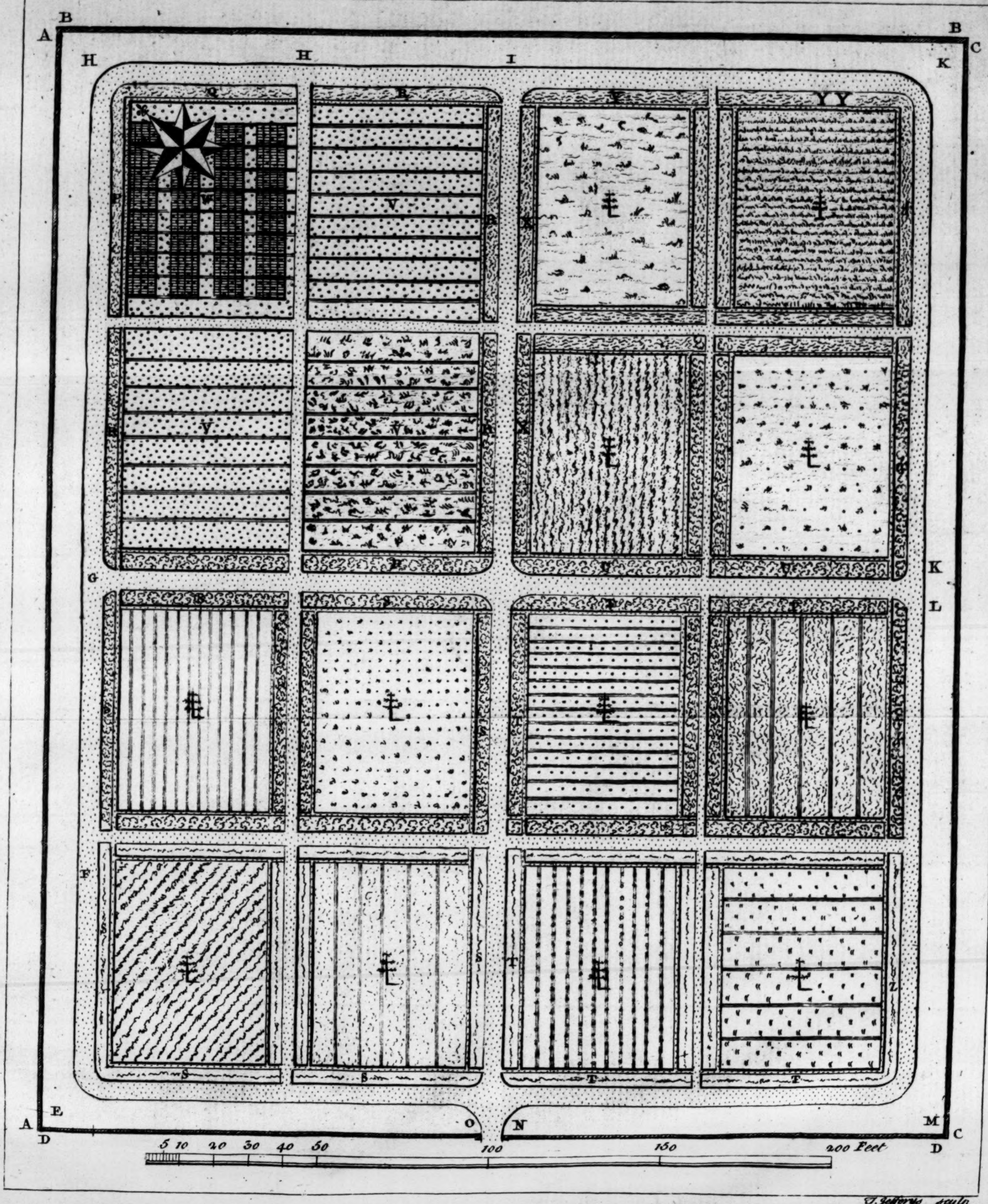
The wall A A, a ſouth-eaſt aſpect.

From E to F.

1. Maſculine apricot.
2. White ſweet water grape.
3. Bruxels apricot.
4. White ſweet water grape.

5. Orange

Plate I.



T. Jefferys sculp.

5. Orange apricot.
6. Black ſweet water grape.
7. Orange apricot.
8. Black ſweet water grape.
9. Orange apricot.
10. White frontiniac grape.
11. Turkey apricot.
12. Blew frontiniac grape.

From F to G.

13. Fairchild's early nectarine.
14. Brick grape.
15. Violet hative nectarine.
16. Raiſin grape.
17. Elrouge nectarine.
18. Black Hamburgh grape.
19. Italian nectarine.
20. Red Hamburgh grape.
21. Temple's nectarine.
22. Black Spaniſh grape.
23. Newington nectarine.
24. Black frontiniac grape.
25. Roman nectarine.
26. Black frontiniac grape.
27. Peterborough nectarine.

From G to H.

28. Catharine peach.
29. Black frontiniac grape.
30. Perſique peach.
31. Black frontiniac grape.
32. Rombullion peach.
33. Black frontiniac grape.
34. Hamburgh peach.
35. Black frontiniac grape.
36. The royal peach.
37. The mealy grape.
38. The large violet peach.
39. The mealy grape.
40. The purpree, or purple peach.
41. The mealy grape.
42. The admirable peach.
43. The mealy grape.
44. The nobleſs peach.
45. White muſcadine grape.
46. Old Newington peach.
47. White muſcadine grape.
48. Old Newington peach.
49. White muſcadine grape.
50. Old Newington peach.
51. White muſcadine grape.
52. Minion peach.
53. White muſcadine grape.

54. Montabon peach.
55. White muſcadine grape.
56. Chancellor's peach.
57. Currant cluſter grape.
58. The Portugal peach.
59. Currant cluſter grape.

The wall B B, a ſouth-weſt aſpect.

From H to H.

60. Italian peach.
61. Currant cluſter grape.
62. Early Newington peach.
63. Currant cluſter grape.
64. Early Newington.
65. Currant cluſter grape.
66. Royal George peach.
67. Currant cluſter grape.
68. Red Magdalen peach.
69. July grape.
70. White Magdalen peach.

From H to I.

71. Brown buree
72. Creſſan
73. St. Germains
74. Marquis
75. Virgole
} pears on quince ſtocks.

From I to K.

76. } Colmar's
77. }
78. Winter rouſelet
79. Bergamot buge
80. Eaſter bergamot
81. } Winter Bonchretien
82. }

(76–82) } pears on free ſtocks.

83. Chamontel on a quince ſtock.

The wall C C, a north-weſt aſpect.

From K to K.

84. }
85. }
86. } Morello cherries.
87. }
88. }
89. }
90. } Late duke cherries.
91. }
92. A black mulberry.
93. Le Beſi d' Hery } baking pears on
94. Cadillac } free ſtocks.
95. } Magnum bonum plums.
96. }

From L to M.

97. 98.	Green damaſcene	Plums.
99. 100.	Imperial	
101. 102.	Orleans	
103. 104.	Fotheringhay.	
105.	The large white with a ſhort ſtalk	Figs.
106.	Marſeilles	
107.	Genoa	
108.	Verniſingue	

The wall DD, a north-eaſt aſpect.

From M to N.

109.	Hanover	Figs.
110.	Cyprian	
111.	Precoce de Tours	Plums.
112.	Drap d'or	
113.	Italian damaſk	
114.	La royal	
115.	Green gauge	
116.	Blew perdrigon	
117.	Verdoc	
118.	Maitre Claude	

From O to E.

119. Rein Claude
120. Red Spaniſh damaſk
121. St. Julian
122. St. Catharine
123. Imperatrice

} Plums.

124. Petit muſcat pear on a quince ſtock.

125. Small May
126. May duke
127. Hariſon's duke
128. Carnation

} Cherries.

The number of trees againſt each wall.

	Apricots.	Cherries.	Figs.	Mulber.	Nectarines.	peaches.	Pears.	plums.	vines.
The Wall AA	6				8	16			29
BB						6	13		5
CC		8	4	1			2	10	
DD		4	2				1	13	
	6	12	6	1	8	22	1	23	34

CHAP. VIII.

Of the Fruit-trees deſigned for Eſpaliers round the quarters.

ON the borders P and Q I do not propoſe any eſpaliers; for the quarter W is intended for a melon ground; and ought to be well ſheltered, either by a wall, or reed hedge.

The borders marked R to be planted with apple-trees upon paradiſe ſtocks, at 14 feet apart, of the following kinds:

1 The Margaret apple.
1 The ſummer ſcarlet pearmain.
6 Golden pippins.
1 The drap d'or.
1 Kirton or crackt pippin.
2 Aromatic ruſſets.
1 Wheeler's ruſſet.
2 Royal ruſſets.
1 French or grey rennet.
6 Nonpariels.
1 Red calvil.
1 L'Api.
24

The borders marked S to be planted with pear-trees upon quince ſtocks, at 14 feet apart.

1 Petit muſcat.
1 Muſcat Robert.
1 Citron de Camus.
1 Early rouſelet.
1 Jargonelle.
1 Roſe pear.
1 Roſe water.
1 Summer bergamy.
2 Royal orange bergamies.
1 De Robin.
1 Muſked Bon Chretien.
1 La Caſſolette.
1 Summer Bon Chretien.
1 La Brute Bonne.
1 La Poir de mon Dieu.
1 Diene, or the deans pear.
1 Red Buree.
3 Autumn bergamies.
3 Grey burees.
1 L' Epine d'Hyver.
1 Ambret.
2 Creſſan's.
2 Marquis.
2 Winter Burees.

32

The borders marked T to be planted with cherries, at 14 feet apart.

4 May dukes.
4 Kentiſhes.
2 Luke wards.
2 Black caroons.
1 White hart.
1 Black hart.
2 Barran dams.
2 Late dukes.
18

The Borders U U to be planted with vines, at 8 feet apart.

4 White ſweet waters.
4 White muſcadines.
4 Currant cluſters.
12

As the quarters V V V are deſigned for aſparagus, and artichokes, there are no borders propoſed round them, by reaſon fruit-trees would be too much ſhaded.

The border marked X to be planted with plum-trees, at 14 feet apart.

6 Green gauges.
2 Queen mothers.
2 Orleans.
10

The border Y to be planted with 5 cornelian cherry-trees, at 10 feet apart.

The border Y Y to be planted with fig-trees, at 14 feet apart.

2 Dwarfs.
1 Minion.
1 Marſeilles.
—
4

The border Z to be planted with 5 black mulberries, at 14 feet apart.

The border marked &c. to be planted with filberds and large nuts, at 14 feet apart, 21 in number.

The other borders that are not marked, to be planted with currants, and gooſeberries, at 10 feet apart: they will contain about 140 in number.

12 Trees at the centers of the quarters are deſigned:

4 Almonds.
4 Medlars.
4 Quinces.

The whole number of trees round the quarters are as below:

24 Apples.
23 Cherries.
4 Figs.

5 Mulberries.
32 Pears.
10 Plums.
12 Vines.
140 Currants and gooſeberries.
In the quarters.
4 Almonds.
4 Medlars.
4 Quinces.

CHAP. IX.

Of Fruit-Trees proper for Walls that have different Aſpects from thoſe in the Plan.

AN infinite number of aſpects may be imagined: but I don't think it material to make any alteration in the kinds of fruit-trees, for thoſe aſpects that are in the ſame quarter.

For any aſpect from eaſt to ſouth, the ſame kinds of trees are proper as are adapted for the wall A A, which has a ſouth-eaſt aſpect.

From ſouth to weſt, the ſame as for the wall B B, which has a ſouth-weſt aſpect.

From weſt to north, the ſame as for the wall C C, which has a north-weſt aſpect: and for any one betwixt north and eaſt, the ſame as for the wall D D, whoſe aſpect is north-eaſt.

CHAP. X.

Of Aſpects, and Situations, proper for Fruit-Trees, and a Kitchen-Garden.

WHERE ground deſigned for a garden is not already limited, there may be an opportunity of chuſing aſpects. As to the figure of a garden, I think none is more proper than a geometrical ſquare, or an oblong, ſet out in ſuch a manner, that each wall may have as much benefit of the ſun as poſſible.

I have, in plate the firſt, given a plan of a ſmall kitchen-garden, containing only two acres, with a chart affixed, by which the aſpect of each wall is demonſtrated; and if ſuch a ſituation may be had, it would be proper to lay out the ground deſcending from the ſouth-weſt ſide, i. e. from A to C in the plan, by which means ſeveral vegetables will come to maturity ſooner than thoſe that are ſet or ſowed in ground quite flat, or deſcending any other way.

It appears by the meridian line, that the ſun's rays continue no longer upon the wall A than three in the afternoon, which I think is the moſt proper aſpect for grapes, peaches, nectarines, and all other kind of fruit that require the moſt regular heat to bring them to perfection, and ſooneſt to maturity; for though the ſun leaves this wall, i. e. A, ſo ſoon in the afternoon, yet in the morning this aſpect will be of advantage to the trees and fruit; for (as apricots, peaches, nectarines, bloſſom early in the ſpring, at which time our climate is frequently attended with froſty nights, deſtructive of both bloſſoms and fruit) the ſun's rays darting in lines at right angles upon the wall at nine o' clock, diſſolve the congealed moiſture much ſooner, than if they darted upon it at right angles at noon, which they muſt conſequently do, if the wall ſtands due ſouth.

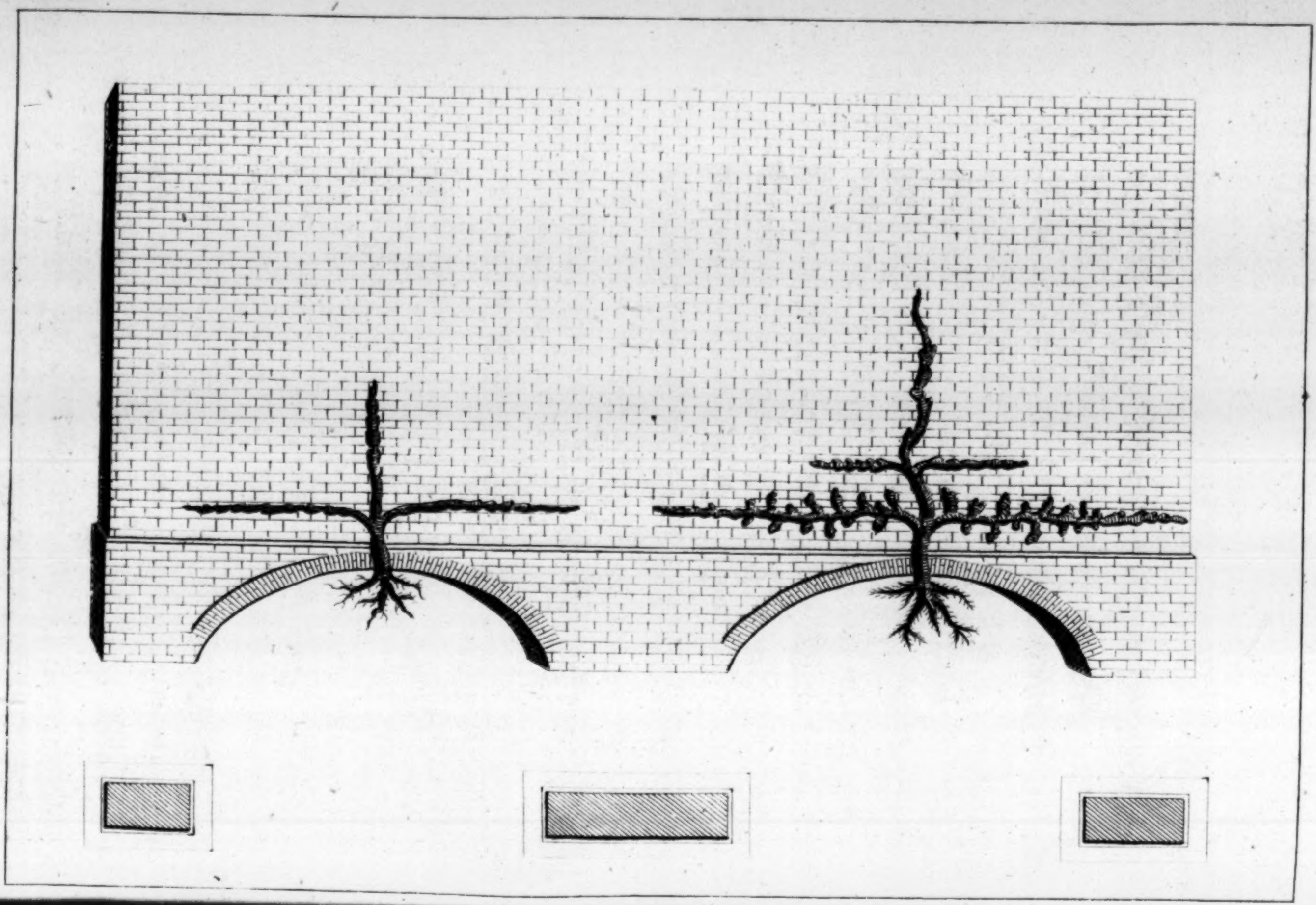
'Tis true a ſouth wall will receive more ſun by three hours, that is, from about three in the afternoon till near ſix, (in the vernal equinox) but that is no great advantage, for before that time of the day the air will be ſufficiently warmed.

Beſides, if the wall is built full ſouth, it will not be ſo proper for fruit-trees as a ſouth-eaſt aſpect; for in the middle of the day, the ſun will cauſe the trees to exhale their juices faſter than their roots can abſorb them, which will render the fruit ſmaller, and the pulp harder, and worſe flavoured, than thoſe which receive the heat more regular.

The wall B receives the ſun about nine o' clock, which is a proper ſituation for ſome of the beſt kinds of winter pears, and which they well deſerve; for they afford fine juices and rich flavours, when other fruits of the ſame quality are wanting. Some kinds of grapes, peaches, and nectarines will ripen well againſt it; and this has one equal advantage with the other wall A, viz. of the ſun's rays ſtriking obliquely upon it at noon.

The wall C receives but little ſun, for it ſhines not upon it till three in the afternoon; but it may ſerve for fruits which

Plate II



22 APR 55

ripen in ſummer, as cherries, plums, and ſome kinds of pears.

The wall D has the benefit of the ſun no longer than nine o' clock; but may be ſuitable for ſuch kinds of fruits as are adapted for it.

CHAP. XI.

Building of Walls after the cheapeſt and beſt manner, with the Diſtance each Tree ſhould have.

THOUGH our Engliſh climate is not ſo warm as ſome others, yet, with ſome expence and induſtry, the nobility and gentry may have their tables furniſhed with good fruits, every month in the year; and with many kinds that are brought from more ſouthern climates, as grapes, figs, peaches, nectarines, apricots, and the beſt kinds of pears, and plums, by preparing ſoils proper for them, and applying their tender branches to walls, as well for their ſupport againſt winds, (which are apt to break them) as the advantages they receive from the reflected heat, which will bring ſuch fruits to perfection.

It may perhaps be alledged, that the building of walls is very expenſive. I grant it is the greateſt expence that attends the making a ſmall garden; yet as no other fence is ſo good either againſt man, or beaſt, and no other method ſo proper for the production of good fruits, the lovers of ſuch will readily diſpenſe with the charge.

But if a new plantation of fruit-trees, or kitchen-garden, is intended to be incloſed with walls, the bricklayer ought by all means to be ſubject to the direction of him who is to make and plant the ſame, for ſeveral reaſons and advantages unknown to the builder, by which the expence will not be ſo great to the owner, as when walls are built before a ſtrict ſurvey is made of the ground, the levels taken, and the nature of the ſoil carefully examined: for I have known land incloſed with walls for a garden before the ground-maker had been conſulted, in which much labour and materials were unneceſſarily ſpent in their foundations, with little advantage to the trees; and much more earth than was needful being removed, greatly increaſed the expence of the work.

Where the limits of a piece of land are already fixt, and there is no opportunity of placing the walls to better advantage, (as to aſpect) than what the boundaries have; in ſuch ſituations the riſings and fallings of the ground are to be obſerved, and the levels for the walls ſet out in ſuch a manner as may occaſion the leaſt earth to be removed.

The courſes of the bricks ought to be parallel to the ſurface of the borders, and walks; though 'tis beſt to make the borders about twelve inches higher than the other ground or quarters at firſt, and ſix inches above the walks, and bottom of the door-ways, for in a kitchen-garden the quarters will from time to time be raiſed with manure; and was not this precaution taken, the walks would become the loweſt part of the ground, which would render them too ſoft for the weight of a wheelbarrow in winter, and the borders too moiſt for the trees to live or thrive well in.

If the ground naturally lies deſcending, let the borders next the walls likewiſe lie deſcending; and if ſome parts are much ſteeper than others, a ſlope in the border and wall may be made to anſwer them: by this means there will be leſs earth to be removed, than if the walls were made either horizontal or deſcending.

If the ground incloſed is intended only for pleaſure, the ſlopes, if planted with proper ſhrubs, will appear more beautiful; and in a kitchen-garden, if they deſcend towards the eaſt or ſouth, will be fit places to ſet ſeveral kinds of vegetables in, as beans, peaſe, &c. which will be earlier ripe by far than thoſe which are ſet in a flat quarter: and I have known ſtandard vines planted on ſuch declivities, whoſe fruit has ripened well.

After the levels of the borders are fixt, preparation muſt be made for building the walls in the beſt and ſtrongeſt manner, to prevent their leaning or falling, which are generally the effects of a too ſhallow foundation.

In building walls for fruit-trees, it ſhould be conſidered what ſpace of wall each tree will fill when come to its full growth: 200 ſquare feet of wall ſhould be allowed to a pear-tree of the moſt vigorous growth, upon a free ſtock, and 150 to thoſe upon quince ſtocks; and the ſame for apricots, or Almonds, and ſome of the largeſt cherry and plum trees; other kinds of cherries, and plums, leſs vigorous, ſhould have 120 feet ſquare allowed them, and the like ſpace for peaches and nectarines, ~~or almonds.~~

When the ſpaces of wall deſigned for each tree are known, at the extremities of ſuch ſpaces pillars ſhould be erected, from which arches may be ſprung, whoſe crown or top ought to be level with the ſurface of the border, and the trench in which they ſtand three feet lower; their length and breadth in proportion to the ſtrength of the ſoil: if the ſoil be a ſtrong clay, or rock, a ſquare of two feet for the baſe of each pillar will be ſufficient, but if it be a looſe earth or ſand four feet ſquare at the baſe will be required, and ſhould have a floor of oak or elm planks, made faſt to joiſts of the ſame timber, (yew, could it be had, would be better) to fix the maſonry upon.

There needs no centre made with boards for turning theſe arches, for the earth may be trodden or rammed down hard between pillar and pillar, and then pared away elliptically.

In plate the ſecond, there are given both plan and upright of a wall of this kind, which makes the method more intelligible; and plainly ſhews, that not one half of the materials is ſunk in ſuch a foundation, as in one built wholly with brick or ſtone.

I have lately ſeen ſome walls built for incloſing a kitchen-garden, where ſome part of the ground whereon the walls were built was nine or ten feet lower than the ſurface of the deſigned borders; theſe walls were carried up from the bottom of thoſe low places with brick-work without arches: but had the method which I have propoſed been made uſe of, much labour and expence would have been ſaved.

But if aſhes, elms, or other foreſt-trees, grow near the outſide, it may be objected, that their roots will grow thro' theſe arches, and greatly impoveriſh the border; but to prevent their roots from paſſing through, a wall of a brick in breadth may be made from the bottom to the top of ſuch arches.

Tho' where the lands adjoining are not planted with trees, theſe arches will be of great advantage to the trees in the garden, for they will extend their roots thro' them, and have double the quantity of ſoil to collect proper juices from.

I have ſeen ſome walls ſtuck with tiles projecting, called horizontal ſhelters; ſome built with large pillars, and others with curves: all theſe are attended with evils of one kind or other; for the horizontal ſhelters are great receptacles of noxious inſects, particularly of the ſmall green and variegated caterpillars, &c. which leave their eggs there to be hatched by the heat of the ſun the enſuing ſpring, and then become very deſtructive to fruit, by eating both the leaves and bloſſoms of the apple, pear, &c. and even the buds before they are unfolded. Theſe inſects alſo devour the leaves of the apricot, cherry, and plum, and eat deeply into their fruits when grown to a good ſize; ſo that they periſh and drop off the trees. Theſe ſhelters are likewiſe very prejudicial to both fruit and branches, by depriving them of the deſcending dews, from which they imbibe great nouriſhment.

The large pillars laſt mentioned have almoſt the ſame ill effects; beſides, they ſhade the rays of the ſun from the trees part of the day, more or leſs in proportion to their ſize.

Tho' walls built with curves have in calm ſeaſons the benefit of more heat than others; yet in windy weather, the winds from ſome point or other rebounding from ſide to ſide, break and deſtroy the tender branches and bloſſoms of trees, whereby they are much more injured than the heat reflected from one wall to the other can be of advantage to them.

I have found by experience, that walls built ſtraight and upon arches, as mentioned before, are preferable to all others, having a coping which projects about two inches, to ſhoot off the rain, in order to preſerve the wall. In ſome places, where proper ſtones were not to be had, I have known plaiſter uſed for this purpoſe, being caſt in moulds about three feet in length, ſix inches deep in the middle, and three inches deep on each edge, which when it was ſet and come to a proper degree of hardneſs, was laid upon the wall, and anſwered the end very well. There is likewiſe made by Mr. Henry Graves jun. of Newark upon Trent, in Nottinghamſhire, artificial ſtones for this and other uſes; the ingredients are chiefly lime, plaſter, and ſand, and are much cheaper than ſtones brought from far diſtant places. But it muſt be obſerved that the plaiſter-copings will ſwell when new; ſo that there ought to be a ſpace of about an inch left between each length, otherwiſe they will not lie cloſe to the walls.

All kinds of copings ought to have a hollow made from one end to the other, with a gowge, or any inſtrument of that ſort, on the under-ſide, about half an inch deep, and as much from the edge thereof; for without this hollow, when they project only two inches, the water will ſometimes follow the underſide of the coping, and diſcharge itſelf down the walls, by which they are decayed when froſt immediately enſues.

As to the height of walls, it may be made at the pleaſure of the owner; but I think betwixt nine and twelve feet above ground is ſufficient for any kind of fruit-trees; for the diſtance allowed from tree to tree is before fixt, in proportion to the height of the wall.

The thickneſs of walls ought to be in proportion to their height, and one of twelve feet high ought to have two bricks in length to the height of eight feet, and from eight to twelve feet high, a brick and half in thickneſs, to prevent the walls from being too heavy at the top.

CHAP. XII.

Obſervations on Stocks in general.

WHAT ſtock is moſt proper for each kind of fruit, ought as well to be conſidered and known, as what ſoil is moſt ſuitable to trees; for on theſe two things the future vigour of trees, and the goodneſs of fruit equally depend. The beſt way for thoſe who intend to plant, is to raiſe their own ſtocks, by which they will be better aſſured of what they do; but if they buy their trees of nurſerymen, they ſhould diligently inquire upon what ſtocks they were propagated.

For ſtocks are in ſome meaſure a ſort of ſoil to the kinds of trees raiſed on them; as every part of a tree, let it be ever ſo minute, forms its root upon the parts below. Thus the taſtes of fruits may be improved by proper ſtocks (and which are proper I ſhall ſhew hereafter) as well as by proper ſoils.

Perhaps it may be the opinion of ſome, that all juices are changed by the pores or veſſels through which they paſs, and that all trees propagated upon any ſtocks whatſoever will equally produce good fruit, admit their growth is healthful and ſtrong: but if they will give themſelves the trouble to examine this point carefully, and without prejudice, they will find as conſiderable a difference (with reſpect to fruit) between ſtocks as between ſoils.

Their opinion indeed has ſome ſhew of reaſon in it; for as the apricot, almond, peach, and nectarine, are generally budded upon plum-ſtocks, yet bear fruit of their own kind, which ſhews that juices are changed by paſſing through a ſmall bud, and the little quantity of rind joined to it (the compaſs of both which is ſeldom above an inch in length, and the breadth about a fourth part thereof) yet if different juices be applied, the taſte of the fruit will be different: I ſhall give an inſtance of this in the nonpareil, viz. If one tree of this kind be planted in a wet clay ſoil, and another in a loam properly dry, and both propagated upon the ſame kind of ſtock, and from one and the ſame branch, they will yield fruits very different from each other, both in ſize and goodneſs.

On the other hand, if two nonpareil branches are grafted, the one upon a paradiſe ſtock, the other upon a crab, and both planted in the ſame ſoil and ſituation, that upon the crab ſtock will produce fruit ſo ſour and ill taſted, in compariſon to the fruit of the other, that if a perſon ſhould taſte them both in the dark, he could not imagine them to be the ſame fruit.

I have ſeen very great difference between the fruit of theſe trees, when one was grafted upon a paradiſe, and the other upon a codling ſtock; for tho' the juices were ſo far changed by paſſing thro' the buds and pores of nonpareil branches, as to produce fruit alike in ſhape, yet their taſtes were different, and ſomewhat reſembled the taſte of that fruit which the ſtocks would have naturally produced. The juices of the crab and codling are known to be very acid, but the juice of the natural fruit of the paradiſe is ſweet.

This inſtance (though I could give many more both in vegetable and animal life) I hope will ſufficiently ſhew how neceſſary it is to have regard to the choice of ſtocks; of whoſe proper ſorts, for different kinds of fruit, I ſhall treat in their order. I have omitted the method of grafting and budding, becauſe it has been already treated of by many, and is well known and performed by moſt gentlemen who delight in gardening, as well as by the nurſerymen.

CHAP. XIII.

Of Stocks proper for Apricots.

AS moſt kinds of apricots, when fully ripe, have no very agreeable taſte to a nice palate, for they are neither truly melting nor breaking, but rather too ſweet and mealy; ſo when they are budded upon any kind of plum ſtocks which have that ſort of juice, their fruit becomes more mealy and ſweet than that of thoſe which were budded upon ſtocks whoſe juices were more acid.

The ſtocks upon which I have found the apricot to proſper beſt, and yield the moſt palatable fruit, are the common red wheat plums; they have a tart taſte, and are ſtocks tolerably free from gum and ſuckers, and may be raiſed from ſtones or layers.

I have ſometimes thought (though I never tried it) that the Orleans ſtocks would make an improvement in the apricot, if they were budded cloſe to the ground; otherwiſe they will be ſubject to gum, as old branches in that kind of tree are: I can't recommend any other ſort of ſtock, be the trees deſigned for walls, eſpaliers, or dwarf ſtandards.

CHAP. XIV.

Of Stocks proper for Almonds, with the earlieſt way of bringing the trees to bear.

SIngle-bloſſomed almonds, with ſweet kernels, will produce fruit, either if they are planted againſt walls, or are ſtandards, and are proper plants for the mixtures generally made in the quarters of a large wilderneſs, or in boſquets of ſhrubs on extenſive lawns; they make a beautiful appearance early in the ſpring, by the abundance of their pale red coloured flowers, and bear fruit very plentifully without much trouble.

They may be propagated by budding on the muſcle or common red wheat plum, or raiſed from ſtones; tho' they bear not ſo early this laſt way: but if a branch from one of the young plants raiſed from ſtones, be budded on the ſame ſtock, it will ſooner produce fruit, both in theſe and any other trees; becauſe, at the place of inoculation, it gives a curved ſhape to the capillary veſſels, by which the ſpeedy motion of the ſap is retarded: for when the veſſels are more ſtraight, the ſap, by its aſcending motion, is hurried faſt to the extreme parts of the principal branches, and there ſpends itſelf in ſhoots and leaves; but when its motion is ſlower, (as it is when the veſſels are more circular, by grafting or inoculation) then the collateral buds receive a greater quantity of ſap, and are prepared for bloſſoms, or with ſuch ſhoots as naturally produce them, being leſs vigorous than the principal or upright ſhoots are. They that have leiſure to make experiments, in order to raiſe new kinds of fruits, may, by taking a bud from a branch of any of their ſeedlings, and inoculating it upon its own ſtem, (or any other) as ſoon as 'tis capable of receiving one; and, with due management, they will ſee the fruit of their labour much ſooner than any other way.

CHAP. XV.

Of Stocks proper for Apples.

THERE are ſeveral ſorts made uſe of; as thoſe raiſed from crabs and apple kernels, from layers of the codling, paradiſe, and creeper apple tree: I don't well know what ſort of fruit the laſt bears; but trees which I have known propagated upon them are of an extreme ſlow growth, and may therefore very juſtly be called dwarfs.

It would be tedious here to point out what ſtock is proper for each tree that may be planted in a garden; for which reaſon I ſhall only lay down a few rules with relation thereto, which if obſerved will be a guide upon moſt occaſions, viz. Thoſe trees that are deſigned for eſpaliers or dwarfs, of any ſhape, whether horizontal, concave, convex, or conical, ſhould be propagated from paradiſe or codling ſtocks, as the nature of the fruit requires; ſuch as produce fruit of the ſweeteſt flavour, and are ſooneſt apt to turn mealy and in-

ſipid,

ſipid, ſhould, in order to improve their juices, be grafted upon codling ſtocks; and thoſe whoſe fruit yields juices of a more acid and rough taſte, may be improved (eſpecially in a wet ſummer) by grafting them on paradiſe ſtocks, which naturally produce ſweet apples.

Such as are deſigned for ſtandards may be grafted upon crab ſtocks; or thoſe raiſed from the kernels of apples, only grafting (as before directed for dwarfs) the ſweet and mealy ſorts upon the crab, and the others upon apples.

But as the fruit of ſtandards is for the moſt part made uſe of in the kitchen, for baking, &c. I recommend the crab ſtock for moſt of them; becauſe kitchen-fruit is not valuable without a tart taſte, either in tarts or pies; and, if made into cyder, it is moſt agreeable to the palates of the beſt judges of that liquor.

N. B. Graft upon paradiſe and codling ſtocks as near the ground as poſſible.

CHAP. XVI.

Of Stocks proper for Cherries.

THERE are only two ſorts that I know made uſe of to propagate others upon, that is, the ſmall black cherry generally uſed in brandy, and a red one which grows wild in woods: both are very free from gum, whereas moſt other kinds are ſubject to it. The fruit of the red is ſomewhat more acid than that of the black, and different kinds may be propagated upon them at pleaſure: but obſerve this, let the place of grafting or budding, in all ſuch as are deſigned for ſtandards, be at the height where the heads are intended to begin. If the ſtems be of other kinds than thoſe above mentioned, they will be ſubject to gum, and not be ſo long lived.

CHAP. XVII.

Of Stocks proper for Nectarines and Peaches.

THESE kind of trees are originally natives of a warmer climate than ours; where the juices contained in the earth are by the ſun's rays rendered more delicate: they are very delicate both in their ſtocks and ſoils, eſpecially the beſt ſorts, moſt of which are firſt raiſed abroad. The ſtocks generally uſed to propagate them upon are plums, viz. the muſcle and wheat plums, on which ſome kinds thrive well, and others will not, particularly the choiceſt ſorts: the beſt method is to rebud them upon the moſt vigorous and healthy kinds, which are generally ſuch as have been raiſed from ſtones in England; but few of thoſe are to be compared in goodneſs with thoſe raiſed in France, &c. tho' if theſe foreign kinds be firſt budded upon the plums before mentioned, they will not bear ſo well, and are more ſubject to blights than thoſe that are rebudded upon healthy kinds of peaches or apricots, by which they are rendered ſtronger, and their fruit abundantly better.

The beſt plum ſtocks for peaches and nectarines (that I am acquainted with) are the green gauge, either raiſed by ſtones or layers, on which moſt kinds thrive well, and produce healthy long lived trees, with well flavoured fruit.

CHAP. XVIII.

Stocks proper for Plums.

THE common ſorts of theſe trees are generally raiſed from ſuckers, on which others of the beſt kinds are either grafted or budded; and ſeveral in common orchards are planted for ſtandards upon their own roots, without any alteration; but the beſt ſorts do mighty well when propagated upon the green gauge, raiſed as directed for peach ſtocks, &c. they are very proper ſtocks, for if the kind propagated happens to die, they will make trees upon their own roots, either dwarfs or ſtandards, and bear good fruit.

CHAP. XIX.

Of Stocks proper for Pears and Medlars.

THERE are generally two ſorts of ſtocks made uſe of for theſe trees, that is, the pear and quince ſtocks, and ſometimes white thorns; tho' trees upon the laſt mentioned ſtocks bear, yet their fruit is always gritty at the core, therefore they ought not to be made uſe of: quince ſtocks in ſome kinds of pears produce the ſame ill effect, but are the moſt proper for dwarfs and eſpaliers; but the budding or grafting muſt be performed cloſe to the ground. Suitable kinds may be propagated upon them, by examining the catalogue of pears and their qualities, and chuſing ſuch as are of the melting ſort; for thoſe of the breaking ſort are apt to become ſtony, eſpecially in a dry ſummer; therefore theſe laſt ſorts ought to be upon free ſtocks, ſuch as are raiſed from the kernels of good melting pears, gathered from trees that are healthy, whoſe branches are always free from canker: on theſe ſtocks trees deſigned for ſtandards ſhould be grafted, and ſo ſhould likewiſe medlars.

CHAP. XX.

General Obſervations to be made in the choice of Fruit-Trees.

THEY that intend to buy their trees, ſhould chuſe ſuch (after the ſtocks and kinds are known) as ſtand not too cloſe in the nurſery; for if they do, their ſhoots will be long jointed, tender and ſpungy; beſides, their buds will be very weak, eſpecially the loweſt, and will be long kept back from a bearing ſtate, by having been deprived by each other of the ſun's rays, of which no trees can have too much in a nurſery; for they attract and carry off a great quantity of watery particles from them, and the earth about them when planted at proper diſtances, which, when they are not, are very prejudicial to them; and if weeds have been ſuffered to grow amongſt dwarfs, their branches will appear like the branches of thoſe which grew too near each other, or rather worſe; in ſhort, the roots of all trees are much hurt by weeds, for they exclude the ſun's rays, which would otherwiſe warm the ſoil, and much encourage the growth of the fibres, and conſequently that of the trees.

It is not much to be regarded from what kind of ſoil you take your trees, provided they have the following marks of health, viz. If their ſhoots at the extremities be very full of buds, and are plump, without any appearance of mildew or blight, and all their other parts free from canker, gum and moſs; for all theſe are ſymptoms of a defect in the roots; and tho' planting them in proper ſoils will remove it in time, yet it will not be prudent to chuſe ſuch trees, for there muſt (as I have ſaid before) be time and proper management applied in order to recover them from their ill ſtate. Beſides, there is a year or more loſt with regard to their bearing, than if they are at firſt free from ſuch defect and imperfection.

CHAP. XXI.

Shapes moſt proper for Apricots, Peaches, Almonds, Nectarines, the Morels and ſmall May Cherries, when taken from the Nurſery, either for walls or eſpaliers.

IN my opinion it is beſt for an apricot-tree to have, when planted, two ſtrong branches beſide collateral ones, as the figure of a tree taken from the nurſery in plate IV. figure 1. if the branches have been once cut down in the nurſery, and thoſe parts well heal'd, they are not the worſe, and the more the principal branches are expanded from each other, the better; for when they have ſuch a ſhape, there is more probability of their having put forth collateral ſhoots early in the laſt ſummer, and at more regular diſtances, than if the principal branches are more erect.

The peach, nectarine, and almond, all which bloſſom in the laſt ſummer's ſhoots, require the ſame ſhape with the apricot, and ought to be cut down in the nurſery after the ſame manner. The ſmall May cherry-tree, and the morella, ſhould be treated the ſame way.

If almonds, apricots, and peaches, &c. be cut down in the nurſery they may be helped with reſpect to their ſhape in April, by leaving ſuch buds as point moſt to the ſhapes above directed, and by confining the ſhoots that come from them with ſtakes and bandages as they grow; but I don't mean that the branches of theſe laſt mentioned trees ſhould be brought to a level poſition, for if they were, they would be apt to throw out ſtrong collateral ſhoots too near thoſe which I call the mean ſtems, which would greatly retard their progreſs; for the two principal ſhould be of as great a length as poſſible in a proper poſition, i. e. they ſhould incline about thirty degrees.

CHAP.

CHAP. XXII.

Of Shapes proper for Pears, Apples, Plums, and the ſtrongeſt growing Cherries, whether deſigned for Walls or Eſpaliers, and how they ſhould be ordered in the Nurſery.

'TIS requiſite that all theſe kinds ſhould have three principal branches or more, anſwering the figure in plate III. figure 1. and if they be more than a year old from the time of grafting, it is a general cuſtom with nurſery-men to cut the branches every year, leaving only two or three buds of each young ſhoot; but I would have two ſide branches left to their full length, both in the apple, cherry, plum, and pear-tree, and only have the central or upright ſhoots cut to a foot in length, if there be three of them, (as generally there are upon a grafted tree;) but if there be only two, then one of them ought to be cut to about the length of ſix inches, and the other left to its full length, which will produce from moſt of the buds ſtuds for bloſſoms, and that which was cut down will produce a ſucceſſion of branches.

Whoſoever has the management of theſe trees in the nurſery, ought to leave thoſe two ſhoots uncut which grow the moſt horizontal; cutting ſuch branches as are moſt upright will cauſe freſh ones to iſſue; for if there be only left on each upright branch about three plump buds, thoſe buds which are neareſt the bottom of the ſhoots are very flat for the moſt part, and of no value, and ſhould be rubbed off to encourage the reſt.

The laſt mentioned kinds of fruit-trees (in the nurſery) may with very little trouble be brought to the deſired ſhape, i. e. the ſide branches when a year old may be cauſed to grow horizontally, by confining them in the ſummer with hooked ſtakes; but in confining them thus, great care muſt be taken leſt the branches, which are then very tender, be broken, and the trees thereby rendered rather worſe than better.

CHAP.

CHAP. XXIII.

Shapes proper for Mulberries, Vines, and Figs in the Nurſery, either for Walls or Eſpaliers.

MUlberries and figs are raiſed from layers or cuttings, and ought to be choſen with three branches or more, with large lively buds at their upper ends. Vines likewiſe are raiſed from layers, and the number of branches ſhould be two or three. I am ſurpriſed that any one ſhould prefer cuttings to layers, when the latter have roots, the former none, and muſt at leaſt be a year more backward.

Note, I adviſe by all means to chuſe ſuch plants as ſtand thin in the nurſery; for thoſe that are near together are the moſt tender.

CHAP. XXIV.

Shapes proper for Dwarf Fruit-Trees of all kinds.

THE kinds of fruit-trees generally kept dwarfs, are the apple, pear, plum, and cherry, and ſometimes the apricot: but this laſt ought to be kept very low, otherwiſe it will ſuffer much, both in bloſſoms and fruit, from violent winds. This and all the reſt ſhould be choſen with four branches or more upon each tree; and though they are commonly propagated upon ſtocks very near the ground, yet their ſtems ought to be a foot high; for if they are not, the branches will be ſo near the borders, that in ſmart ſhowers the rain will rebound from them to the fruit, and cover ſuch as are loweſt with ſoil, by which they will become leſs beautiful to the eye, and much worſe in taſte than others, by receiving too much water. Beſides, if their ſtems be not of the height aboveſaid, it will be very difficult to keep the borders clean from weeds.

All the ſhoots that form the heads of dwarfs ſhould, as near as poſſible, be of an equal height, which may be effected by ſtopping the principal branch when a year old, at the height deſired; at the ſame time all the lower buds ſhould be rubbed off, and only five or ſix left, which are neareſt the top.

If theſe heads be two years old before the trees are removed, they are not the worſe, if the branches have been kept in a horizontal poſition, except one ſuffered to grow upright.

Some ſtandard vines bear grapes which ripen well in England: they ought to have ſtiff ſtems prepared, which may be done by tying them up to ſtakes about a foot high, before they make a head. Figs may be trained up and brought to bear in the ſame manner; but theſe two laſt require a different preparation of ſoil, as before has been ſhewn.

Gooſeberries, and currants, bear beſt upon ſingle ſtems, about the height of thoſe of the other dwarfs, being free from ſuckers at their roots, and having their heads about two years old, with branches regularly ſpread round, but not too near each other.

CHAP. XXV.

Shapes proper for Standard Fruit-Trees.

THE fruit-trees commonly planted in orchards, are the apple, pear, plum, cherry, medlar, walnut, mulberry, and quince-trees, the laſt of which is upon its own root; from which a ſtraight ſtem ought to be trained to the height of ſix feet at leaſt; if lower, their heads will be injured by cattle, when they are put in to paſture amongſt them, as they often are when the trees have been planted a few years: all the above mentioned trees ſhould have ſtraight ſtems, of the ſame height with that of the quince, and ought each of them to have five branches or more at the head, putting out at equal diſtances from the ground, and from each other as near as poſſible; none but one of the branches ſhould ſtand erect, and if the heads be above a year old, they are not the worſe. Note, the almond, ſweet cheſnut, and filberd, muſt have ſhapes like the former.

CHAP. XXVI.

The method of taking up Trees, and replanting them in the ſame Garden.

TREES ſhould be taken up very carefully, leſt they be injured, for on this their future ſucceſs depends; tho' I have ſeen it performed very careleſsly by nurſerymen's labourers, who only ſtrike down a ſpade with their feet round them, and then with both hands pull them up, not having any regard to the uncut roots, which are very often broken off, or ſplit near the ſtem; beſides, thoſe that are cut thro' prove very often too ſhort.

Tho' authors have directed that the roots ſhould be reduced to a certain length, yet I am well aſſured, that the longer the horizontal roots are left, the better they are; for they chiefly abſorb ſuch juices from the earth as promote vegetation;

and therefore no length can be well aſſigned, as to the roots, but it ought to be, carriage conſidered, as great as poſſible, if they are brought from a diſtant nurſery, or tranſplanted into ſome other part of the ſame garden; in the laſt caſe there is a probability of the roots taking with them a large quantity of the adhering earth, if the trees be taken up artfully. And a fruit-tree, if it be required, of more than twenty years of age, may be tranſplanted very ſafely, without the loſs of life, or any of its uſeful branches.

The right method of taking up trees, is to take off the ſurface of the earth round them, ſo deep as to bare the uppermoſt roots to a ſpace proportional to the ſize of the trees, in order to leſſen the weight; otherwiſe they will not be ſo fit for carriage, and they will be in danger of being broken by the weight of earth which is upon them.

When either large or ſmall trees have had their roots bared in the manner juſt before mentioned, then a trench muſt be dug quite round them, ſo wide and deep that the earth may be eaſily taken from under the trees, leaving only that which incloſes the greateſt part of the roots; care muſt alſo be taken to cut the longeſt roots that are in the way, with a knife, not with a dull ſpade, for that will rather break than cut them, and will ſhake off too much earth, eſpecially from the largeſt kinds of trees, becauſe their roots are ſtrong, and require a greater ſtroke with the ſpade to break or cut them; and the larger trees are, the more earth ought to be left about their roots, in order to retain proper juices for the ſupport of the other parts: after they are thus opened and cut round, a hand-barrow may be thruſt under them, on which they may be carried to the place where they are to be planted; but before they are planted, let all the large roots that are in ſight be carefully examined, and if any of them are broken, let them be cut off with a ſharp knife, in ſuch a manner, that the part ſloped may ſtand downward like a horſe's hoof; for if the ſlope be on the upper ſides of the roots, their woody parts will be apt to receive too much moiſture, and thereby become rotten, and greatly re-

retard the growth of the trees for many years.

I ſhall defer the method of planting, till I have ſpoken of the management of trees, that are to be fetched from diſtant nurſeries, which cannot have much earth brought with them; but the length of the roots ought to be as great as poſſible, as has been before directed: the roots of thoſe muſt be bared and opened, in the ſame manner as the roots of trees which are to be tranſplanted in the ſame garden; they muſt not be too violently pulled by their ſtems, but let all their roots be cut thro' with a knife, or ſharp ſpade, and packed up, as I ſhall direct in the next chapter.

CHAP. XXVII.

How to pack up Trees ſo, as that they may be carried ſafe to places remote from whence they are raiſed.

I Muſt own that I have received peach-trees and nectarines from Mr. Henry Woodman of Strand on the Green, in the county of Middleſex, which I planted for the Reverend Mr. Ewer, of Bottisford near Belvoir caſtle; ~~ſome~~ all of them lived and some bore fruit the firſt year after planting, tho' they were brought above a hundred miles, and only packed up with ſtraw and matts; they have been planted nine years, and are now ſtrong healthy trees.

But there is a better method of packing trees, eſpecially apples, pears, plums, cherries, &c. that are deſigned for walls and eſpaliers, by reaſon of their ſhapes deſcribed ſome pages before, which is this. Let there be provided large hampers, made of the ſame materials as thoſe commonly uſed for packing bottles in, when they are to be conveyed to diſtant places, and let their length be about four feet, their breadth at each end about two feet and a half, but in the middle they need not be above one foot and a half broad, and let their depth be in proportion to the number of trees intended to be packed therein; then let moſs be gathered, which grows plentifully in the ſhade under hedges, or in woods, and cover the bottom of the hampers therewith; and after, let there be between each layer of trees, a layer of moſs; if ſome of the trees be laid with their roots to one end of the hamper, and ſome to the other, more may be packed therein. And if the moſs, which is much ſofter than ſtraw, be moderately moiſtened at firſt, it will retain its moiſture a great many days.

CHAP. XXVIII.

The Benefit of cutting Roots and Branches at the time of removal.

AT the time of planting fruit-trees, ſome cutting is required both in their roots and branches; but before any directions can be laid down for pruning, it ought to be well conſidered in what caſes it is ſerviceable. The roots will certainly be leſſened by being removed; if they be taken up ever ſo carefully, ſome of the ſmall ones will be broken off, and others in carriage become ſo dry, that their minute veſſels can no longer be ſerviceable to the plants they belonged to; then, conſequently, the quantity of juices which the roots that are left can abſorb, muſt be leſs than the quantity abſorbed by all the roots before they were taken up; for which reaſon it will be very neceſſary to leſſen the branches in proportion, as near as can be reaſonably conjectured, to the veſſels that are loſt at the roots: if this be done, the trees thus removed will continue their growth, except ſhaken by the wind, or ſome other outward obſtruction: but if all their branches remain upon them, if they live, they will make but very ſlow progreſs in ſhooting the next year, tho' planted in the moſt proper ſoils; an ill ſtate of health will enſue, hardly ever to be altered or cured by even the moſt proper treatment, for the ſun will cauſe them to exhale their juices as faſt thro' the pores of the rind and leaves, as it did before they were removed, and the number of veſſels in the roots being leſſened, are not ſufficient to keep the capillary tubes properly full, whereby a part or all of them become uſeleſs. If the whole number of veſſels be deſtroyed, death muſt enſue, and if only a part of them, ſickneſs: which I have very often ſeen; for the rind on the ſunny ſide has been quite dead before June next after planting.

CHAP. XXIX.

Cutting the Roots of Trees, &c. Obſervations on the common method.

WEAKNESS is occaſioned by different errors in cutting. The firſt and greateſt of which is, the cutting of the horizontal roots ſhort, at the time of planting, tho' it is done according to moſt authors direction; but I ſuppoſe, when they mention the cutting of roots of fruit-trees, to nine or ten inches long, they only mean the tap or downright roots; for ſhortening the horizontal roots too much will certainly leſſen the quantity of juices, which trees naturally require, becauſe there will not then be left a ſufficient number of pores to receive 'em.

If any of the ſtrong roots be broken in the carriage, and the ſmall fibres dried and uſeleſs, in ſuch caſe the latter ought to be cut off cloſe to the ſtronger to which they are joined, otherwiſe they will corrode, and mix their corrupt matter with the natural juices contained in the pores of the earth, whereby they will be rendered unwholeſome before they enter the pores of the living roots adapted to receive them: and if thoſe roots that are ſtronger be broken or bruiſed, they muſt be taken off with a ſharp knife, ſloping on the underſide; if not, they will produce the ſame ill effect. Let all thoſe that be whole, and are in a horizontal poſition, or near it, be cut to a great or unlimited length; yet the top, or downright ones, ſhould be cut to about the length of a foot; by which the number of roots will be increaſed, and ſometimes the new ones will extend themſelves more horrizontally, and be of greater ſervice to the trees, than thoſe which ſtrike downward; for the latter commonly cauſe trees to ſhoot forth branches too luxuriant and full of ſap, which will not produce bloſſoms.

I grant, that all trees imbibe more or leſs part of the juices that ſupport them, from the dews in the night, thro' the pores of the rind and leaves; but the ſun attracts more in the day, than they imbibe in the night, otherwiſe they would grow without any aſſiſtance at all from the roots.

By what has been ſaid, I think it appears neceſſary, to have the horizontal roots left as long as poſſible, that the branches may not want a ſufficient quantity of moiſture for their nouriſhment.

I cannot in this place help taking notice of a method recommended and practiſed by too many, that is, when the roots are become dry, to place them upright in water, for the ſpace of twelve hours before planting; but this method is very injurious to them: for at the ſeaſon of the year in which trees are removed, the weather is cold, and the roots having too great a quantity of water in them, and wanting heat enough from the ſun, to cauſe an immediate evaporation, are thereby ſtarv'd.

I have always found it more proper to plant immediately after the roots were dreſſed, in the manner before-mentioned; and it is but reaſonable to imagine, that they will meet with moiſture enough in the earth, and ſuch ſorts as are more proper for them, than the waters taken from either ſprings, rivers, or ponds; for the former, by paſſing through the pores of the earth, are mixt with the ſalt particles thereof, which cauſe a fermentation in the veſſels or capillary tubes, as ſoon as they enter them.

CHAP. XXX.

Of pruning Branches at the Time of Planting.

A Method which I have obſerved to be generally practiſed, though of very ill conſequence, is cutting the branches too ſhort, and leaving too many in number upon each tree: by which means the trees are injured many ways; for though they ſometimes grow vigorouſly, yet the branches are unduly placed, in any kind of fruit-trees, either for walls, eſpaliers, dwarfs, or ſtandards: if the branches are too near each other, ſome of them will be deprived of the benefit of the ſun's rays; and when the branches of wall-trees, or eſpaliers, ſtand near each other, upon their ſtems, and are cut too ſhort, it will be impoſſible to lay them in a horizontal poſition, without being much cloſer than they ought to be, in order to make them bear; and if many of the new branches are cut out the next year, thoſe that remain will be more luxuriant, and not bloſſom very early.

Beſides cutting branches too ſhort, viz. to the length of ſix or eight inches each, at the time of planting, ſometimes occaſions death, or ſickneſs, eſpecially if the branches be very ſtrong, or more than one year old; for then the buds left on, having been ſo much ſhaded, are very flat, and their foldings much more difficult to be forced open by the ſap in its aſcending motion, than thoſe at the extremities of the ſhoots, which always appear more plump.

This is the fate, in a great meaſure, of thoſe that were cut down in the nurſery the year before, which with proper cutting and management might have been made good trees. This method of ſhort cutting, which, as I have obſerved, is generally practiſed upon ſtandard-trees of all kinds, has different effects, according to the various ſtates the heads of trees are in at that time, for ſome have their branches of one year old only, others of two, and others of three years old, &c. Now if the head of a tree be only one year old, ſhortning the branches cauſes the ſucceeding ones to ſpring out too near each other; by which they will, in a very few years, either croſs and gall each other, or the head will be compoſed of too great a number of branches; ſo that all of them will not be of a proper ſtrength, as ſhall be demonſtrated hereafter, by cuts adapted to the ſeveral kinds of fruit-trees.

This ſhort cutting or ſtumping is the moſt injurious to trees whoſe heads are furniſhed with branches of two or three years old, &c. whether apples, pears, plums, or cherries, for their buds are either prepared for bloſſoming the next ſpring, or elſe with ſpurs, which would bloſſom the ſecond or third year after planting; but ſuch buds ſeldom produce ſhoots.

To prevent the ſeveral diſadvantages mentioned, by improperly cutting the heads of trees at the time of planting, it is neceſſary to conſider, firſt, what proportion the roots loſt by removal bears to thoſe left on, and in ſuch let the number of branches be leſſened, with a proportional allowance for the drying of roots in the carriage, and the diſadvantage which in tranſplanting muſt attend them, the earth being not ſo naturally placed to them as before.

All kinds of low trees may as well be cut after planting as before, but tall ſtandards ſhould be cut before, by reaſon of their height. After I have done with planting, I ſhall give full directions for pruning fruit-trees of all ages; and I hope what I have ſaid here will prevail upon every obſerving reader, not to cut raſhly at the time of planting.

CHAP. XXXI.

Planting of Wall-Trees, Dwarfs and Eſpaliers.

THE method of preparing different ſoils for borders has been treated of before, in which directions were given to turn them over twice before planting. I ſhall here only add, that the oftener they are ſo turned, the better the ingredients will be mixed with the natural ſoil, and that it will be of ſervice to have the holes wherein the trees are to be planted, dug about a week or fortnight before; for if there be any tough or hard particles in the ſoil, they will be attenuated by being expoſed to the air, and changes of weather.

Fruit-trees may be planted from the latter end of October to the end of February, at any time when there is no froſt; but October and November are the moſt proper months for planting, becauſe the weather is generally more mild and open in theſe, than in the other three; and the earlier trees are planted, the more time will there be for the earth to ſettle well to their roots before the ſpring; but when the borders cannot be prepared ſo early, 'tis better to plant later, even to the middle of March, than to loſe a year; for undoubtedly all thoſe that are at the charge of building walls, would willingly have fruit as ſoon as poſſibly they could; and the loſs of trees, if there be any, by planting ſo late, may be ſupplied the October following.

In ſome ſprings trees are more backward in putting out by near a month, than they are in others, which ought to be well obſerved with regard to planting; if the buds begin to open, 'tis too late to plant, if the trees are to be removed to any conſiderable diſtances, for then the veſſels of the roots are more open than before, and ſooner become uſeleſs by draught in carriage. Trees may likewiſe be injured by being removed too early in October. As ſoon as they have ſhed their leaves, 'tis time to remove them. Sometimes apricots, peaches, and nectarines, will retain their leaves till December; if they do, they may be ſafely removed in November, if the weather is open, for the parts which retain the leaves ſo long are commonly ſuch as are to be taken off, being very apt to be killed by the winter's froſt.

The diſtance which trees ſhould be planted from the wall cannot well be aſſigned; it muſt be in proportion to the length of the roots, which ought not to be ſhortened in order to bring the ſtem nearer the wall; but if it may be done without cutting the roots, I would have the ſtems placed about ten or twelve inches from the wall; for when they are fixed at a much greater diſtance, they will be more apt to throw out ſuckers from their roots.

Care muſt be taken, in planting, to fix thoſe parts that are cut at the place of budding or grafting next to the wall, for they will thereby be ſooner heal'd, and diſcharge the wet much better than if they were placed on the outſide.

The holes having been dug, trial muſt be made to ſee whether they be wide enough to receive the roots without preſſing upon the ſides, and of ſuch a depth that the uppermoſt roots may, when fixt therein, ſtand full as high, or rather higher than the ſurface of the border wherein they are planted; for as the borders will ſettle and be raiſed again in a few years, were not this precaution taken, the ſtems of the trees would be buried.

'Tis beſt planting when the ſoil is moderately dry, for then it will intermix itſelf better with the roots than when it is wet, neither will it be ſo apt to ſet hard when troden cloſe; but if the ſoil be too moiſt, it will be proper to mix with it, before it is applied to the roots, either dry ſoot or coal-aſhes ſifted very fine, which always have been kept dry; for the earth, and ingredients applied to the roots, ought always to be as fine as poſſible. When the roots are all covered, let the trees that have ſtiff roots be ſhaken up and down with the hands, that the earth may paſs more readily between the roots, and fill all the cavities: after the roots are covered to the depth of three inches, let them be gently troden round, without breaking or bruiſing them; then let a hillock be raiſed round each tree, ſix inches higher than the other parts of the border, and about a yard in diameter; afterwards let each hillock be covered with ſoot or coal aſhes, mixt with an equal quantity of earth, to the thickneſs of half an inch, and all over the border about one fourth of that thickneſs, which will defend the roots from dry or froſty weather. And if the earth be very dry at the time of planting, let the trees be moderately watered round their roots.

The method of ſhaking and treading is not to be uſed, when trees are removed from one place to another, in the ſame garden, with earth about them; for ſhaking will only draw the ſmall roots into heaps, and treading will break off the earth.

If trees be planted in November, or earlier, let all ſuch branches be taken out as are not conſiſtent with the trees intended ſhape; but they muſt not be nailed up till February or March; before that time the roots will ſettle with the borders, if the trees be left looſe; but if they be confined to the walls, the earth then ſettles from their roots, and leaves a cavity under them.

CHAP. XXXII.

Obſervations on Pruning the Heads of Trees or Branches in general.

THE beſt kinds of fruit-trees that grow in England are generally planted in gardens fenced with walls, to which their branches are confined, that they may have greater advantages than common from the ſun's reflected heat, and that they and their fruit may be defended from the violence of winds, which otherwiſe might be very deſtructive to both.

There are generally in the ſame garden other fruit-trees, planted either to make eſpaliers or dwarfs; all which require great care to keep them in due order, that the fruit which they produce, and the pleaſure they afford to an admirer, may in ſome meaſure make amends to the proprietor for the charges of building, planting, &c.

The erecting of walls being very expenſive, no part of them ought to be left vacant, where any thing tending to pleaſure or advantage may be placed.

I have before ſhewn what I thought neceſſary to be done before, and at the time of planting; and ſhall now give ſome directions for keeping trees in the moſt healthful ſtate, productive of good fruit in the greateſt quantity, and as early after planting as poſſible, without injuring them for the future: to effect which many endeavour by various ways, and eſpecially immoderate pruning, tho' without effect; for when the knife is moſt made uſe of, there is commonly the leaſt ſucceſs. Tho' there is an abſolute neceſſity of leſſening the number of branches at the time of tranſplanting, or ſoon after, yet they ought to be leſſened in ſuch a manner that thoſe left on, and ſuch as proceed from them, may extend themſelves in the leaſt time, ſo as to fill the ſpace of wall aſſigned them; and that all the trees planted may, one with another, cover the whole wall, without having their branches too near each other, but that each may receive equal advantages from the ſun, air, and dews, the ſtronger being confined in ſuch a poſition, that young ones may iſſue, and be obtained from them when wanted.

But before I ſhew the method of pruning trees deſigned for walls or eſpaliers, I ſhall make ſome obſervations on thoſe kinds of ſtandard fruit-trees that are natural to our climate; for, I think, in theſe nature beſt ſhews us the time and manner of pruning.

If there are two apple, pear, plum or cherry trees, equal in health and ſtrength, at one year old after grafting, let them remain ſome years after in the ſame ſtations, having ſufficient ſpace to extend their branches in, and one of them be pruned, and the other not, but ſuffered to grow in a ſhape quite rude and natural, the latter will produce fruit much earlier than the other, though, perhaps, its branches will not be in ſo regular a poſition as thoſe of the former; hence it may be reaſonably inferred, that premature pruning retards bearing, and that pruning a healthy, ſtrong ſtandard in what manner ſoever, before bloſſoming, will keep it longer back from a bearing ſtate than it would be, were it left unpruned to the direction of nature alone; for, ſhortening the branches takes away the buds from the extremities, which always bloſſom firſt, and if ſome of them be quite cut off, the vigour of thoſe remaining will be increaſed, and the more vigorous the branches are, the longer it will be before they bloſſom; for it is obſervable, that thoſe kinds of ſtandards before-mentioned, produce moſt fruit near, but below ſuch parts of their branches as were once the end of a year's ſhoot, and on ſuch branches as are horizontal or declining; for which reaſon I think it beſt to leave vigorous ſtandards unpruned, till they have bloſſomed, or only to take out ſome of the upright branches that would gall others.

Perhaps it may be ſaid, that of two of theſe trees, the one cut and the other uncut, the former will produce better fruit when it bears than the latter. I grant it will, were the latter never cut at all; and that pruning after bloſſoming, as I hinted before, is very ſerviceable to ſtandards in the following caſes, which are manifeſt ſigns of their want of it. Firſt, when they bloſſom much, but bear no fruit, which ſhews that they are too weak, and that part of their branches ought to be cut off, by which thoſe that are left will receive a greater quantity of ſap, and produce as good fruit as others of the ſame kind that have been often pruned. 2dly, When the fruit which they bear is ſmall, and ſome of the branches that formerly bore are covered with moſs, or are dead, then in order to enlarge the fruit, thoſe moſſy and dead branches ſhould be taken out. 3dly, When trees put forth young branches out of ſome of the old ones which have born, it ſhews they want to be relieved by taking out the old ones, and enabling them to produce their fruit upon others that are young.

From what has been ſaid, I think, it appears very plain, that cutting of ſtandard trees before they bear, is injurious, though afterwards ſerviceable; i. e. of the cherry, plum, pear and apple.

I never ſaw apricots, peaches or nectarins, bear without cutting; but the almond, which neareſt reſembles them, bears plentifully, and produces part of its fruit upon branches made the year before, and part upon ſtuds proceeding from branches of two years old; both of them are furniſhed with buds at their ends, which produce leaves, and are a good ſhelter to the bloſſoms and fruit. It is obſervable, that this tree bears moſt fruit at the end of its branches; and for this reaſon, the ends of branches ought not to be taken off, neither from this tree, nor any other nearly like it, as thoſe are which I juſt before mentioned. But the apricot ſometimes produces ſhoots in autumn, from the ends of thoſe ſhoots made in the ſummer; theſe latter made ſhoots generally die in winter, therefore ſhould be taken off at the next time of pruning.

Though I have ſhewn the ill conſequences of pruning ſtandards before bloſſoming, except at the time of planting; yet trees planted againſt walls ſhould be pruned in a proper manner, in order to reduce their branches to a juſt number: for were all to be left on, there would be too many to place againſt the wall, without being too near each other, or at leaſt than thoſe would be upon the ſame tree, if it was a ſtandard; for there is a great difference between one and the other; moſt ſtandard trees grow naturally in ſhape like a cone or hemiſphere, ſo that if one tree be a ſtandard,

ard, and another planted againſt a wall, and their branches extend in height and breadth alike from their ſtems, yet that which is a ſtandard fills a ſpace more than double to that of a tree planted againſt a wall: conſequently, more than half the branches or buds which put forth from the latter ought to be taken off. This is the beſt reaſon I can give for pruning of wall-trees, before they have born; but afterward it is requiſite to take thoſe branches out, and leave young ones to ſucceed them. But there is no need of ſhortening branches in any kind of old fruit-trees, to increaſe their number, for young ones will naturally proceed from thoſe that are nailed horizontally.

There are many that prune all kinds of wall-trees immoderately, twice in the ſpace of a year: Firſt, in the winter they ſhorten all the branches, under the pretence of getting new wood to cover the walls; Secondly, in ſummer they cut a large quantity out of the trees; becauſe, as they ſay, the wood is too ſtrong, or that there is too much. But to cut in the winter to gain wood, and to cut wood out in the ſummer, becauſe, forſooth, it is too ſtrong, is, I think, acting counter to nature, and ſpending ſap unneceſſarily; for, as the ſtrength of the wood, and the growing of the branches too near each other, are entirely owing to the winter cutting, if the branches were then placed horizontally on the wall, there would be no occaſion to cut out ſo much in the ſummer; and the ſap, which the roots collected from the earth, would form new branches more fit for the production of fruit, and in ſuch places where they might continue; ſo by this method the trees will bear, and the walls will be covered ſooner than by any other. It may be objected, that leaving the branches to ſo great a length, as not being cut at all, will weaken trees, or in other terms exhauſt the ſap from the roots; but the contrary may be eaſily proved. Admit both ſides of a tree have at firſt an equal number of branches, and let either of the ſides be cut at pleaſure, and obſerve, by the buds, what number of ſhoots may be produced from the remaining branches on that ſide which is cut ſhort, then let whole branches be left on the other ſide, in proper places, and the uſeleſs buds taken off, till their number on each ſide be equal; by this management it may be reaſonably expected, that there will be an equal number of new branches on each ſide; now, if no more ſhoots be produced, by leaving the branches long, on one ſide than there are on the other which was cut ſhort, how can one method weaken a tree more than the other? The conſequence, indeed, of leaving the branches long will be this, they will have produced ſhoots at more proper diſtances, and cover the wall ſooner with ſuch as will earlier bear, than thoſe on the other ſide which were cut ſhort; beſides, there will be no occaſion to thin them ſo much in ſummer on that ſide where the branches were left the full length in winter, and the uſeleſs buds diſplaced.

I have ſeen nectarines and peaches, that have been planted againſt walls ten or twelve years, which have been annually cut in the winter, in order to make them ſtrong, and thinned in ſummer, according to the uſual cuſtom, that the fruit may be larger and not too much ſhaded. Excellent reaſons and management! whereby two thirds of the branches are either cut or ſhortened, and, at the ſame time, a third part of the wall is uncovered. Had the branches ſhortened in the winter been left their full length, ſo as to cover the wall, and in April all their buds rubbed off, except ſome to produce ſhoots in proper places, then there muſt certainly have been more fruit, and fewer branches to be taken out in ſummer; for the quantity of ſap, which ſupported them, might have ſupported as much fruit as would have been equal to them in weight: beſides, I have known by experience, that trees, by this ſhort cutting, are not ſo apt to bear.

At the requeſt of a certain gentleman, I ſhortened the branches of a peach-tree on one ſide, according to the rules laid down by the beſt authors; but the other ſide I nailed to the wall, without ſhortning one branch, (which is the method I have practiſed many years;) the crop of fruit, as well as the number of young branches on that ſide of the tree where the ſhoots were not ſhortned, was ſo greatly preferable to thoſe on the other, that the gentleman was thoroughly convinced by this, and other in-

inſtances given him, that ſhortening of branches was an ill practice, both in the peach-tree and many others.

The fig-tree, of ſome kinds, bears plentifully upon ſtandards, if their branches be never ſhortened; and I have ſeen fruit ripen well upon them in England, where the ſoil was dry and mixt with ſtones, in ſuch places where they were ſheltered from the winds; but in others, where they are expoſed, the fruit is commonly beaten off by the winds before it arrives to maturity, as it always grows very ncar the ends of the branches, and on no other parts, except the preſent years ſhoots, or the upper ends of thoſe of the laſt year; therefore their ſhoots ought not to be ended in the winter; and there is no neceſſity of ſhortning to procure young branches, for there is always a ſufficient ſtock of them riſing yearly from the roots, which, when the trees are planted againſt walls, may be trained up to ſucceed others; and if they grow to the top of the wall, may be taken out cloſe to the ground. I ſhall ſay no more concerning the uſefulneſs of pruning, but ſhew how it ought to be performed upon the different kinds of trees.

Plate III

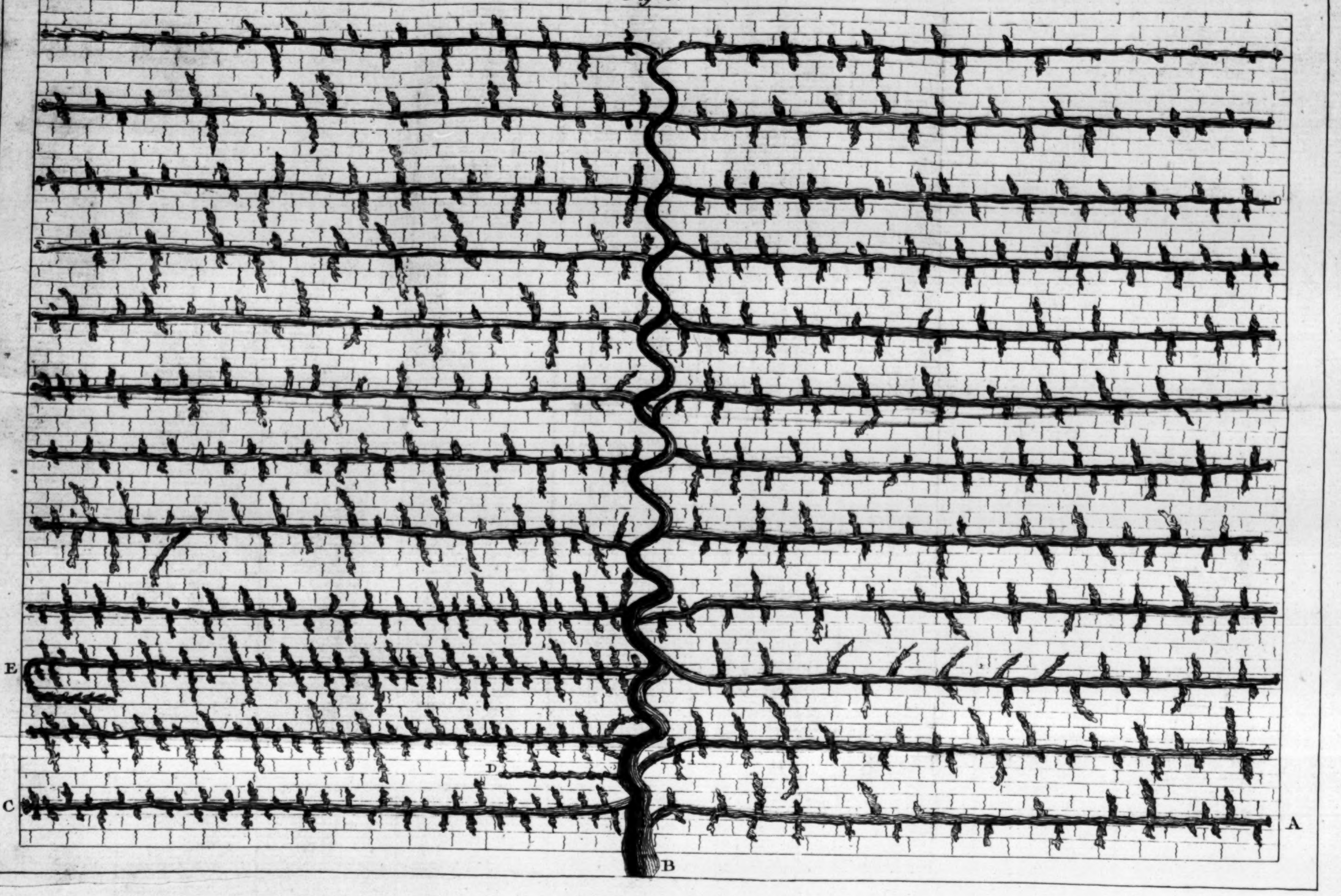


Fig. 6.

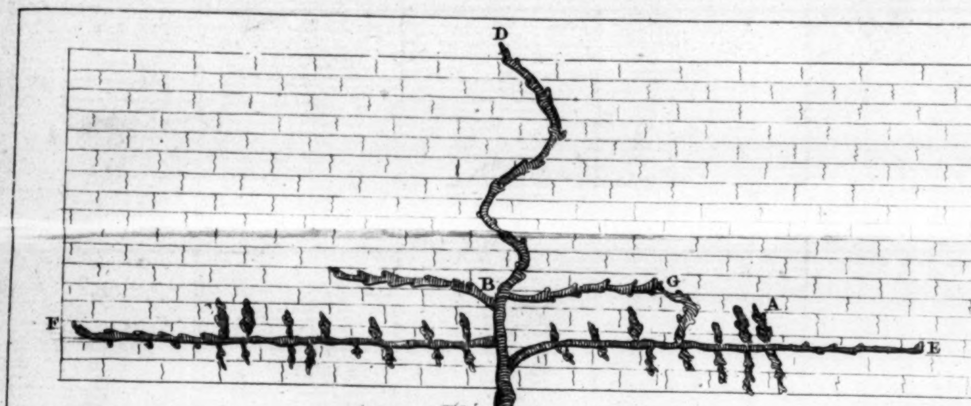


Fig. 5.

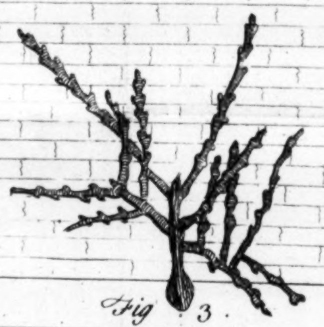


Fig. 3.

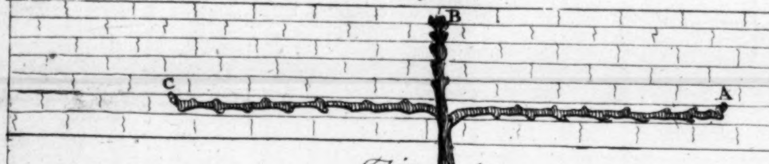


Fig 4.

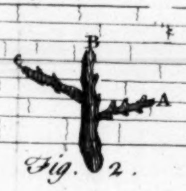


Fig. 2.

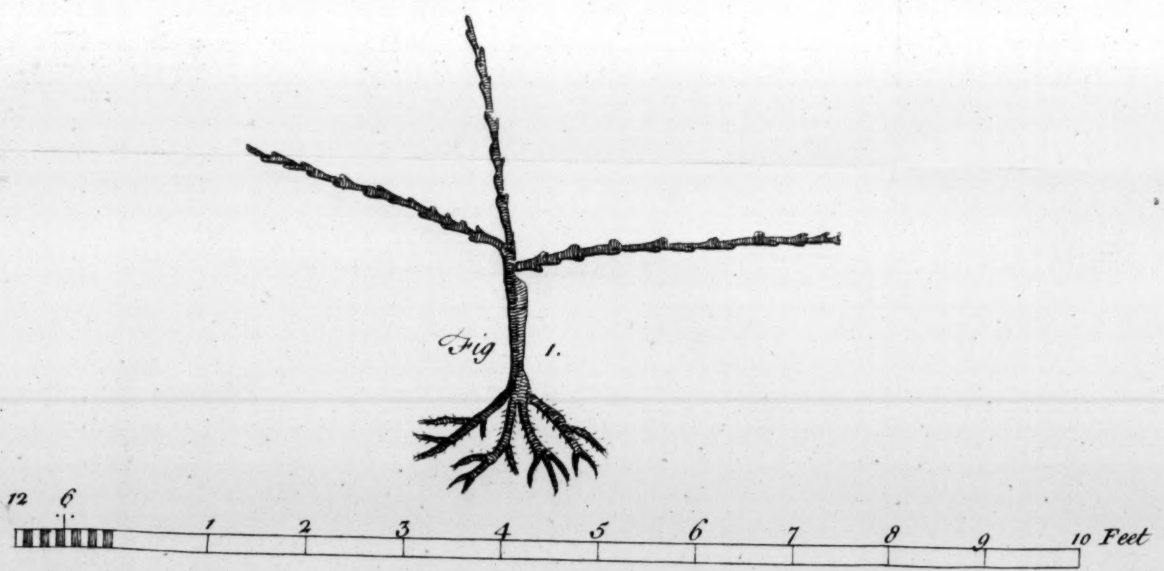


Fig 1.

T. Jefferys sculp.

CHAP. XXXIII.

Cuts of Trees explain'd, as in the third Plate.

I AM ſenſible that cuts made uſe of in ſeveral tracts of gardening, in order to ſhew the figures of fruit-trees, are very much ridiculed, becauſe of the uncertainty of the number of branches which a tree may put forth, and of the difference which may be eaſily diſcerned between one tree and another, that are both planted at the ſame time, in like ſoil and ſituation. Yet I have choſen to make uſe of ſketches to explain my method of cutting, &c. better than I was capable of doing by words only.

Plate III. Figure 1. is the ſhape of a tree that is properly ſtrong. What I call properly ſtrong, is, one that has two or three branches of a yard in length or more; one that has its branches leſs than two feet in length, I call weak, which has been grafted a year, and taken up in order to tranſplant it, whether it be an apple, pear, or plum, or cherry-tree, for they all have nearly this ſhape at the age aforeſaid. Fig.

2. is the ſame planted againſt a wall, and cut in the manner directed by all authors that I have read on this ſubject. Fig. 3. repreſents the ſame tree with the ſhoots it would probably make, if it were properly taken up, and planted in a ſuitable ſoil. Fig. 4. is the ſame tree tranſplanted as Fig. 1. being cut and nailed after the method which I have practiſed many years. Fig. 5. is the ſame with the increaſe of branches made the firſt year after planting, and nailed as intended for the winter order. Fig. 6. is a tree when grown to the height of the wall, and the breadth allowed to each tree, ſuppoſe it be a pear upon a free ſtock, as may be proved by the ſcale, if by it the ſpace of wall it covers is meaſured, for it is the ſame as is before allowed for pear-trees upon ſuch ſtocks.

CHAP. XXXIV.

The Inſtruments and Materials proper for a Dreſſer of Fruit-trees.

1. A Well-tempered knife, with a narrow blade at the point, not much crooked.

2. A whetſtone for ſharpening it.

3. A mallet and chiſſel, well tempered, about two inches broad, and not too thick.

4. A pair of ſhears or ſciſſars to clip ſhreads with.

5. Strong nails, a little more than an inch long, with thick ſhanks and heads: thoſe made of *Engliſh* iron are beſt.

6. A hammer, with a ſhaft longer than the ſpaces between the rounds of the ladder.

7. A baſket about 12 inches long, ſix broad, and ſix deep, with loops to put a belt through on one ſide, that it may hang before the pruner, having the ſide on which the loops are made bending, to reſt the better againſt his body, and a diviſion in the middle for two different ſorts of ſhreads,

the longeſt an inch broad or more, the ſhorteſt about a third part of an inch broad; the latter are beſt for the bearers in peaches and nectarines.

8. A ladder in length ſuitable to the walls.

9. A deal plank to tread upon, with a ſtrap at one end to draw it by, if there be nothing upon the borders.

10. A ſmall pair of pincers, with which nails may be drawn out better than with the claws of a hammer.

11. A whitewaſher's bruſh will be uſeful; for when trees are grown nearly large enough to cover the wall, they ſhould be unnailed about three weeks before they are cut in winter; it will be of ſervice to them, for the winters rains and ſnows will better waſh off and deſtroy part of the caterpillars eggs, which are lodged upon various parts of the trees and walls, and likewiſe other inſects that harbour there in winter, in the foldings of the old ſhreads, but by taking theſe ſhreads off, and turning them when uſed again, they loſe their ſhelter. Before the trees are nailed up again, let brine be made ſtrong enough to bear an egg, and with it and the bruſh let the walls

be waſhed all over, or as much as can be without breaking the buds or branches; this will be a great deſtruction to the inſects at that ſeaſon of the year. But before cutting and nailing, let the following rules be obſerved; let all cuts be made on the ſides next the walls, and never let two branches be laid acroſs each other, except upon an extraordinary occaſion for one year, not longer; neither let a branch be pinched with the ſhreads. Let the ſtrong branches have ſtrong ſhreads. Never let a branch touch a nail, ſo as to preſs againſt it. And before old ſhreads are uſed, let them be ſoaked a night in the aforeſaid brine.

CHAP. XXXV.

The firſt Time of pruning and nailing a Pear Tree upon a free Stock, which had three ſtrong Shoots or more at the time of planting.

PEAR-trees bear their fruit upon ſtuds or ſpurs of various ages; and there are ſome few which I have ſeen that bear upon the extremities of the laſt year's ſhoots, others upon ſtuds or ſpurs * that proceed from branches of two, three, four or five years old; and ſome kinds bear beſt upon collateral branches of near a foot in length of that age, left to the direction of nature, without being ſhortned, as ſtandards when their branches are horizontal or depending. I would have no other branches left unnailed, but ſuch as grow out of the ſides of others, and that don't much exceed half a foot in length.

Fig. 4. of the laſt plate, repreſents a tree properly ſtrong, and is the ſame with fig. 1. only tranſplanted, cut and nailed. As I make uſe but of three names for all the ſeveral branches of a tree, I ſhall here explain them, that the reader may better underſtand my meaning. The centre-branch B is called the ſtem, through which the ſap is conveyed from the roots, to ſerve all other parts of the tree; the other two A and C are horizontals, and thoſe proceeding from the ſides of them, as in fig. 5, and 6. are bearers.

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* What I mean by ſtuds or ſpurs, are collateral branches not exceeding ſix inches, having buds at their extremities.

In the beginning of March, after planting, let the two lower branches A and C, be nailed quite flat to the ſtem, to about three inches of the other ends, then turn them, by nailing more upright, which will occaſion the ſap to paſs more freely through the extreme buds, and lengthen the horizontals: but care muſt be taken, leſt they ſlip from the ſtem; to prevent which, let each of them be nailed near it with ſtrong ſhreads, and the nails placed on the upper ſides, that the branches may preſs upon the ſhreads; for, if they preſs upon the nails, they will be injured by them: this is a neceſſary caution, many branches having been ſo deeply gall'd by nails, that a canker has enſued, which often proved mortal. As this method of nailing theſe two branches at full length is very uncommon perhaps, my reaſon for ſo doing may be demanded, which is this; the ſhortning of branches, if they be healthy, which they generally are upon free ſtocks, takes off ſuch buds as would earlieſt bear, and it occaſions two or three of thoſe that are left on, and neareſt the cut, to put forth ſhoots, which are at a year old as far from bearing, as that which produced them was before it was cut, ſo that by cutting there is a year loſt before they bear; and every time this is performed on the ends of branches, it retards their bearing: I own it increaſes the number of branches, but many of them will be in ſuch places where they cannot continue the next year, without being too near each other in ſome parts: I nail them horizontally, with an intent of procuring bearers at all parts of the horizontals; for the buds neareſt the ſtem are always more compact, and of a flatter ſhape, than thoſe which are neareſt the extremities of the branches, and are very ſeldom opened, if nailed upright; then the lower parts of the branches will be left naked, and the upper will put forth ſhoots of too great a length to be left unnailed; and if the next year they be cut out, or ſhortned, it increaſes the vigour of the other parts ſo much, that many ſtuds put forth ſhoots, which would have produced bloſſoms in a year or two more; and, if nailed up, will be nearer each other, or in a more erect poſition than what the beſt authors direct, and the beſt pruners practiſe.

I come now to the center branch or ſtem; this ought to be left 12 or 14 inches long, or longer, with three or four buds * or eyes at the upper end that appear plump, and are in a fair way of putting forth ſhoots: let all the others that are below be rubbed off; for thoſe that are neareſt the bottom are moſt flat, and when ſhoots are produced from them they are weak, and the more ſo towards the lower end of the branches; beſides they are in ſuch places where ſhoots are not wanted for my purpoſe, therefore they ſhould be taken off; for the quantity of ſap, ſpent in forming uſeleſs branches, will be uſeful if driven to the upper buds, which are deſigned to produce ſhoots in proper places. Let the ſtem be cut an inch at leaſt above the uppermoſt bud, for when amputation is made too near it, it ſometimes prevents its ſhooting, and if it ſhoots at all, it is but in a very weak manner: the reaſon, I imagine, is, that too great a quantity of watery particles, entering into the ſap veſſels at the part cut, chill and retard the ſap's motion, or by letting out of

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* Buds or eyes are thoſe parts which appear higher than the bark upon a branch that was made the laſt year.

theſe veſſels too great a quantity of air, whereby the force of vegetation is weakened.

As all the ſeveral kinds of bon chretiens ſeldom grow proſperouſly, if they be cut too ſhort at the time of planting, by reaſon of the long ſpaces between their buds, whoſe lowermoſt are very flat, and ſcarce diſcernible, ſo they, and all ſuch trees as produce ſhoots like them, ſhould be cut at a greater length than fourteen inches, in order to preſerve ſome plump and full buds upon that part of the ſhoot left on, which will certainly break forth into ſhoots.

The branch B is left fourteen inches in length, with an intent to gain proper branches to form horizontals at a ſuitable diſtance from the others, for they ought not to be nearer than twelve inches, let them be of what kind ſoever.

Perhaps it may be demanded why I cut this branch at all; to which I anſwer, that as the tree is ſuppoſed to have been brought from ſome diſtant place, part of the roots which it had before it was taken up muſt undoubtedly have been loſt, and ſome of the ſmalleſt fibres become dry and uſeleſs, by being expoſed to the air in their removal; therefore this branch is ſhortened, and the lower buds deſtroyed, with a deſign of leſſening the number of thoſe parts that receive the ſap from the roots, in proportion as near as may be judged to the parts of the roots loſt by removal; for as all the roots collect from the earth a quantity of juices only ſufficient for the due nouriſhment of the whole tree, ſo a part of them can collect only a quantity ſufficient for a part of it; now if the whole branch be left on with all its buds, the remaining roots cannot ſupply its veſſels, and keep them properly full to its extremity, from whence the death of part of the branch enſues. As ſoon as a part of it becomes dry and dead, the mortification deſcends very faſt to the deſtruction of the branch it begins in, and ſometimes of the whole tree.

CHAP. XXXVI.

Pruning and Nailing of a Pear-Tree the firſt ſummer after planting.

THE Fig. 4. repreſents a tree cut and nailed with three or four buds at the upper end of the ſtem, and two horizontals left at full length, to which due regard muſt be had the firſt ſummer, and let all the other buds which may probably break forth from the ſtem be rubbed off; the horizontals muſt be alſo well obſerved, for ſometimes it happens that a ſtrong ſhoot, or more, will put out from thoſe buds near the ſtem, which will rob all the others ſo much, that when a tree is weak, the upper parts of the horizontals are thereby killed or much weakened; but in May it may eaſily be diſcovered what progreſs each bud is likely to make, and if many of thoſe which were deſignedly left on be weak, having put forth but a few ſmall leaves, or none at all, then if there be a few ſtrong ones proceeding from the horizontals, the ends of thoſe new-made branches ſhould be taken off, to about three or four inches in length; this will occaſion two or three to put out which will be leſs vigorous, and may in time become bearers; but if all or moſt of the buds upon the horizontals have put out, then let the ſtrong branches continue till Midſummer, when a better judgment may be formed, whether they ought to remain, be taken out, or ſhortened; for if, at that time, moſt of the other buds upon the horizontals have made ſhoots to the length of ſix inches or more, and thoſe at the top of the ſtem have ſhot forth a foot or half a yard, then the long branches upon the horizontals may be left growing; for taking them off will cauſe the others that are deſigned for bearers to ſhoot too vigorouſly; but that the tree may have a better appearance, they may be either cut to eight or ten inches in length, or nailed to the wall in ſuch places where they will not deprive the others of the ſun or air; but they muſt be taken out in the winter, except they be wanted to make good ſome deficiency near the places whence they proceed from; thoſe alſo that ſhoot from the extremities of the horizontals ſhould be nailed upright, to prevent their being injured by the winds.

I have not directed what ſhould be done in May, to the buds left in the ſpring on the upper end of the ſtem at the point B; if they put out vigorouſly, let them all remain, but if they be weak, take all off but the ſtrongeſt: ſometimes it happens that they all put out ſtrongly with collaterals of various lengths; in ſuch caſe they ſhould not be cut out in the ſummer, but nailed up to the wall to ſecure them from the winds, and ſo remain till November or either of the two months following, all which are proper ſeaſons for pruning, which I will now treat of in the next chapter, and ſhall refer to Fig. 5. which is the ſame with Fig. 4. when cut and nailed a year after tranſplanting.

CHAP. XXXVII.

Pruning and Nailing a Pear-Tree upon a free Stock the ſecond Year.

THE ſtem in Fig. 5. marked D at the upper part, is left uncut, but nailed with turnings as it appears; my reaſons for ſo doing is to procure collaterals from it of a proper length for horizontals, and in proper places, i. e. at juſt diſtances from each other. I have ſaid before, that they ſhould be no leſs than 12 inches apart. Thoſe parts of the ſtem which lie flat are moſt likely to produce ſhoots from their buds; and when they put forth rub off all others, but thoſe that are about twelve inches above each other on both ſides, and the ſame diſtance from B: now had this ſtem been nailed upright at the ſame, or any other length, it would not have put forth ſhoots fit for horizontals at any other place but the extremity. Another advantage attends this method; for when the tree is full grown, and has born, and thoſe branches are part of them cut off, then the flat parts of the ſtem will produce young branches, which if laid horizontally will produce bearers.

When a ſhoot produced at B is not much more than two foot long, it may then be deemed not ſtrong enough to produce more than two or three branches fit for horizontals, and ought to be cut about two or three inches higher than the places where the horizontals are required; but when a ſhoot is three or four foot long, then it may be ſuppoſed ſtrong enough to produce more ſhoots, and by the turnings as from B to D they will be at the places deſired.

Tho' I have only ſhewn one ſtrong branch in this place which is nailed up for a ſtem, without leaving any of the laſt year's ſhoots, but only two that are too ſhort for horizontals, yet when there are ſhoots of about a yard long or more, in thoſe places where horizontals are required, they ought to be nailed as A and C are in Fig. 4. tho' at proper diſtances from them, ſuppoſe they either proceeded from the buds left at B, or if they be collaterals from one of thoſe ſhoots.

But when there is not one ſhoot proceeded two foot long or more from any of the buds left upon the ſtem B, and if there be any of that length proceeding from the horizontals near the ſtem, then let one of them be nailed up as that is from B to D in Fig. 5. and if the horizontals have produced none fit for the purpoſe, the beſt uſe muſt be made of thoſe weak branches which have proceeded from the buds left at B; i. e. let all the branches except one be cut off, and that which is left muſt not exceed the length of ſix inches when cut; then let all the buds but the three uppermoſt be diſplaced, and ordered in ſummer as directed for thoſe at B in Fig. 4. by which it will be encouraged to make the ſtronger ſhoots. If there be only one ſhoot, and that not ſix inches long, let it remain, only rub off all the buds, except the upper one. If the ſtem B was dead down to the place where the horizontals put out, let one of thoſe ſhoots proceeding from either of the horizontals be nailed in an upright poſition, and let it be ordered as is directed for others which are made uſe of for ſtems, according to its length. As thoſe two branches made from B want length for horizontals, they ought to be cut off about ſix inches from the ſtem, and their buds all taken off but the uppermoſt, by which they will make longer ſhoots the next year.

I come now to the horizontals A and C, which muſt be examined to find whether they be both alive; and if there be one dead, another muſt be procured ſome way or other, either from the ſtem or from the other ſide. If the ſtem be well furniſhed at top with ſhoots of a proper length for this purpoſe, they ought to be longer than thoſe that grow ſtraight from the ſtem without turning; let one be turned down to the place where it is wanted, but let that part of it which is brought downward be kept as near the ſtem as may be, till it is brought to the place for which it is deſigned; but if this can't be done, a ſhoot muſt be taken from the other horizontal: if there be any of a ſufficient length, and if a horizontal can't be gained by either of theſe ways, the firſt opportunity that offers in the ſummer following, muſt be made uſe of in order to gain one, or elſe bring the ſtem to a horizontal poſition, and recover a new ſtem from the firſt ſhoot that offers.

If both the horizontals are dead, others muſt be brought to their places from the parts above by the ſides of the ſtem, as before directed when one was wanting, or elſe bring down the ſtem for one, and make one of the young branches the ſtem.

But let both be ſuppoſed to be alive, and to have made ſhoots nearly like thoſe in Fig. 5. the firſt thing neceſſary to be obſerved is their extremities, which I before directed to be nailed more upright than the other parts, in order to promote their ſhooting out to a greater length; but if any of the collaterals near them is ſhot out to a greater length than they, ſo as to extend itſelf farther on the wall than thoſe in a horizontal poſition, let their places be changed; that is, let the long ſhoot be laid horizontally, and that which was the horizontal before remain for a bearer. What the horizontals have increaſed in length this year, muſt be nailed in the ſame poſition as thoſe of the laſt year, along the ſame courſe of bricks, &c. What theſe horizontals are ſuppoſed to have increaſed in length in one year, is between A and E on the one ſide, and between C and F on the other. When trees have ſhot out ſtrongly, as this is ſuppoſed to have done, the leſs they are cut before they bear the better, for by cutting ſhort nothing more is gained than a greater number of ſhoots too near each other, and too vigorous for bearing; and ſometimes it cauſes the collaterals that proceed from the horizontals to make ſhoots, which collaterals would otherwiſe have produced bloſſoms in a year or two.

I have directed before to nail or cut ſuch collaterals as might happen to be of too great a length; but now, at this time of winter-pruning, it ought to be conſidered what length they ſhould be left at, moſt proper for bearers; for ſeveral kinds of pears produce their fruit upon ſtuds, or branches, of different ages and uncertain lengths: ſo that if the collaterals proceeding from the horizontals be almoſt equal in length, let them all remain, and let the horizontals be placed about two inches farther from each other than the length of theſe collaterals which proceed from them: but when the latter are very unequal in length to each other, it is difficult to diſpoſe of them, for if the longeſt be taken out, it may perhaps cauſe the others to put forth ſhoots; and if they are naturally placed almoſt all together, when they are taken away, that part of the horizontal will be left naked.

The method by which I order them is nearly like that which I uſe for the ſtems; I turn as many of them as room will permit, either above or below the horizontals to which they belong, as one may be ſeen at G, Fig. 5. which might have had more turns, if the length had required them. If there be not room enough ſufficient to turn them all after the ſame manner, let thoſe that remain be taken out, and let not any part be cut off from theſe horizontals and branches which proceed from them in the ſummer following: thoſe that are intended to lengthen the horizontals muſt be ſeveral times nailed up to the wall, in manner directed for others the foregoing ſummer.

I now return to the ſtem that was nailed up, with all its buds on, the laſt winter, from B to D. When the buds are about an inch long, 'tis time to rub off all thoſe that are not deſigned for horizontals; and the ſame work muſt be repeated ſo often in the ſummer as there is occaſion. There muſt be a ſpace of twelve inches between the buds that are left, on one ſide of the ſtem, and they ſhould be left on both ſides at that diſtance; and as they ſhoot forth, nail up the branches as before, to prevent their being broken by winds, but let nothing be cut off till the next winter, at which time the pruner muſt ſo diſpoſe of the ſhoots that have been made the foregoing ſummer, as to form a tree in ſhape like the lower parts of Fig. 6. and if the young tree is healthy it may poſſibly cover the wall in ſix years, and the owner have taſted the fruit produced from ſome of the lowermoſt branches in a ſhorter time.

I hope the foregoing reaſons and directions which I have given concerning pruning, will be ſatisfactory to every intelligent reader, and will enable him to bring a ſtrong young tree to the ſhape of Fig. 6. in the time propoſed before.

Note, Thoſe trees which have been trained up in the nurſery, by the former directions, to a ſhape nearly like Fig. 5. in this plate, are at the time of re-planting, and afterward to be treated in the ſame manner, with this precaution only, that is, to cut off more branches at their removal, by reaſon of their loſs of roots.

CHAP. XXXVIII.

Pruning and Nailing Trees planted with one or two healthy branches.

AS what I have ſaid in the preceding chapters concerning pruning, was only with regard to a tree taken from the nurſery, with three branches or more, I ſhall now ſpeak of the pruning and ordering of thoſe which are brought from the nurſery with only one or two branches. Let us ſuppoſe then that a tree has two healthy branches, each of them a yard in length, or more, if the ſtronger of them be laid horizontally, as A or C, in Fig. 4.

it will bear ſooner than if they had both been cut; and the earlier it bears, the ſooner a gentleman knows how he has been uſed by the nurſeryman; for if the tree be of a bad kind, the ſooner it is changed the better, either by planting a better in its place, or by grafting upon it the kind required: but as I have directed one of the branches to be left whole, the other muſt be cut to ſuch a length, that there may be four or five plump buds left at its top; all the lower buds muſt be rubbed off, and afterwards let it be ordered according to its ſtrength, as Fig. 4. in the two laſt chapters.

If a tree has only one ſtrong branch, and no more, of any ſort, then it muſt be cut and ordered in every reſpect like that left for a ſtem in the laſt; let the ſhoots be nailed to the wall in the ſummer; and if there be three or more of them, when they are about a yard long, place two of them as is before directed, but that which is intended for the ſtem let it be kept nailed upright, till the ſeaſon for winter-pruning, and then let it be ordered by the rules given for others of the ſame ſhape and ſtrength.

CHAP. XXXIX.

Pruning and Nailing of young Pear-Trees that are weak upon Free-Stocks.

IF trees be weak when taken from the nurſery, or are become ſo after tranſplanting, the method which is both taught and practiſed for their recovery, is to cut their branches ſhort and in proportion to their ſtrength. But I think the ſhortening of branches only is no great help to them, as it may occaſion a greater number than there was before to ſhoot forth; for it may reaſonably be expected, that, there will two and ſometimes more. proceed from each that was cut; but if one ſhoot only proceeds from each branch, they muſt conſequently be the ſtronger, for the ſame quantity of ſap is collected by the roots, and conveyed thro' the veſſels, to thoſe buds that are adapted to make ſhoots, and the fewer the buds are that receive it, a greater quantity muſt certainly enter into them, and by it larger ſhoots are formed; for if the ſame quantity

tity of ſap, that enters only one bud for the production of a ſhoot, is received by four buds, the four ſhoots that proceed from them will be of a leſs ſize in proportion to their number.

A weak tree is to be improved by nailing; for according as it is performed, it contributes either to the ſtrengthening of a tree that is weak, or to its continuance in the ſame condition; for the more erect the branches are placed, the more eaſily does the ſap paſs to their extremities, and there forms much ſtronger ſhoots than when they are placed horizontally, for then the ſap puſhes almoſt equally at every bud on the upper-ſide of the branch, which renders the ſhoots proceeding from them weaker in the ſame proportion as their number is to one. But to nail upright and diſplace uſeleſs buds, are the beſt methods that I am acquainted with in pruning, to procure ſtrong ſhoots from weak trees, which are the chief things to be obtained in order to form ſuch as the Fig. 4. 5. and 6. for they all repreſent a ſtrong tree of different ages; and if all the former rules be obſerved in preparing ſoils, taking them up, &c. ſtrong and healthy ones may be obtained.

CHAP. XL.

Shewing the different advantages ariſing from the ſeveral ways of Pruning young Pear Trees upon Free-Stocks.

I Have in the laſt chapter ſhewn my method of pruning and nailing young pear-trees upon free-ſtocks, which as it is very different from what is generally practiſed, I ſhall here give my reaſons for it, and ſhew the many advantages ariſing therefrom, more than by the cuſtomary methods of cutting ſhort; and begin with the two trees newly tranſplanted, repreſented by Fig. 2. and 4. the former ordered after thc cuſtomary method, the latter, i. e. Fig. 4. after mine. I believe it will appear ſtrange that in Fig. 4. I left two branches uncut, but nailed horizontally. But if it be demanded why they are not cut and nailed like the ſecond figure, I anſwer, that by nailing the two branches A and C, as in Fig. 4. I propoſe to have bloſſoms and fruit earlier by a year than if they had been cut as in Fig. 2. for pear-trees always bloſſom at the end of a ſhoot, or upon ſtuds that put forth collaterally near thoſe parts which were once the ending of a year's ſhoot; but as the Fig. 2. is cut, the extreme parts of the branches are taken away, and the buds that are left on at A, and C, after it has been planted a year, produce ſuch ſhoots as are ſhewn in Fig. 3. and 4. after it has been planted one year becomes a tree like Fig. 5. and ſome kinds of pears will bloſſom at that age.

But Fig. 3. repreſenting a tree cut after the cuſtomary manner, and if planted at the ſame time with Fig. 5. will have made but few other ſort of ſhoots than thoſe left upon Fig. 4. at the time of planting, and no nearer bloſſoming; by which it plainly appears, that different ways of cutting trees make at leaſt a year's difference in their bearing, and that ſuch as are prepared in the nurſery have a year's advantage of others.

If any perſon is not ſatisfied with what I have ſaid, I deſire him only to make trial upon part of a tree, by which he may diſcover whether what I have aſſerted be true or falſe.

Trees that are ordered as is ſhewn in Fig. 4. till they become like Fig. 5. and 6. are earlieſt brought to bear, and their ſap is ſpent in uſefully ſupporting their fruit, &c. but in Fig. 2. and 3. it forms many ſhoots in the ſummer which are cut out in winter; let any man therefore judge which method is beſt to be practiſed, whether to procure fruit upon a young tree, or luxuriant branches to employ the knife upon.

I aver that a tree nailed by my method, ſhall conſtantly produce a third part more of good fruit, than one that is cut ſhort and nailed like Fig. 2. and 3. for the latter are generally nailed to the wall in ſhape of a fan, by which ſome of the branches are placed almoſt perpendicularly; ſo that all the middle of a tree has no other but ſtrong barren branches in it, and its bloſſoms are only at the extremities of the lower ones, and the middle parts put out in ſummer ſtrong ſhoots to be cut out in winter, according to the annual cuſtomary method of diſpoſing of ſap; but on a tree like Fig. 6. there will be both bloſſoms and fruit near the ſtem, as well as upon the extreme parts.

It may be ſaid, when a tree bloſſoms and bears ſo early, it thereby becomes weaker; but if it is ſtrong enough to produce ſhoots of the length I have mentioned, before they ſhould be laid horizontally, the tree is then ſufficiently ſtrong, and when it does not produce ſuch ſhoots, I do not ſuffer it to bear at all; but when a tree would be too vigorous without bearing, it is then of ſervice.

I have ſeen trees bear ſoon after planting, without putting forth any ſhoots, which was only owing to ſhort cutting; for inſtance, when a tree is taken from the nurſery with branches of more than a year old, then the lower parts of its arms or branches have few or no buds upon them for the production of ſhoots, but ſtuds prepared for bloſſoming the next year, or in a few years after: now if this tree has its branches cut to the length of ten or twelve inches according to cuſtom, thoſe parts of the branches which remain are more than a year old, having no buds naturally prepared for the production of ſhoots, but buds only which bloſſom and bear, one or other of them, for two or three years, without making any conſiderable ſhoots, which is often the caſe in ſtandards; then a tree is ſaid to be weak.

Sometimes a tree planted with ſhoots on it of one year old, which have buds that ſeem likely to produce ſhoots, may nevertheleſs produce but weakly ones the firſt year; and if too many of them be left on, and cut ſhort without diſbudding, the tree will remain in a weak ſtate, tho' in a few years it will yield fruit, but not ſo good as others whoſe ſhoots are of the length I have directed, before they ſhould be nailed horizontally in order to put forth bearers.

If an early bearing tree be cut as I have directed, it may produce both fruit and proper branches, admit part of the laſt year's ſhoots be left at full length, and part of the buds on the others diſplaced; for then the remaining buds will form ſhoots, and if part of the ſtuds or bearers be taken off, the ſhoots will be the ſtronger.

CHAP. XLI.

To prune a full grown Tree, ſo as to make it bear good Fruit in the largeſt quantity.

IT ſhould firſt be conſidered what ſtate of health the tree is in, whether it be too weak, too ſtrong, or in a proper ſtate. The ſymptoms of weakneſs are, bearing or bloſſoming much, and ſhooting but little. Thoſe of ſtrength and a proper ſtate may be known by the following directions, viz. if a tree ſhoots much, and bloſſoms but little, it is too luxuriant or too ſtrong, admit the ſhoots it makes be healthy and free from canker at their extremities and all other parts.

When a tree ſhoots ſtrongly, and bears a plentiful crop of large fruit, it may be judged to be in a proper ſtate of health. Let us ſuppoſe, that one of theſe healthy trees be in ſhape like fig. 6. and begin with the management of it in May, after it has been winter-pruned, and made new ſhoots, then it may be diſcovered what quantity of fruit it will bear. If there be an appearance but of a ſmall crop, then fewer of the new made ſhoots muſt be taken off, than when the crop is large; for when a tree is in health, and has but little fruit upon it, as it ſometimes happens, after violent froſts in the ſpring, then it is often too vigorous; if there be too many of the uſeleſs branches taken off, ſeveral of the ſtuds will make ſhoots, which otherwiſe would have produced bloſſoms the next year, for in healthy trees the ſap will diſcharge itſelf into ſhoots through one part or other.

What I mean by uſeleſs branches are ſuch as put out from the ſtem in ſuch places where horizontals are not wanted, and ſuch as proceed from horizontals, which by their ſtrength ſeem as if they would ſhoot to too great a length for bearers.

All branches that proceed from the ſtem ſhould remain, for they cannot over-ſhadow any of the bearers; if they be kept tied or nailed upright, theſe I call waſte-pipes, all the other uſeleſs branches that proceed from the horizontals, when they are grown ſo long as to ſhade the bearers, muſt be cut to the length of about nine inches, for if they are cut at that length, they will make autumnal ſhoots, by which the ſap will be diſcharged without forcing the extreme parts of the bearers into ſhoots.

But when a tree bears plentifully, and ſhoots ſtrongly, it requires a quite different management in the ſummer, for then all the uſeleſs branches, which proceed from the horizontals, muſt be cut cloſe off from them; by this method, the ſize and goodneſs of the fruit will be improved. It is cuſtomary with ſome to cut theſe branches to about tree or four inches in length, but this kind of cutting occaſions a greater number of branches, which are ſo near each other, that much the greater part of them never bloſſom, for want of ſun and air, but they put forth ſhoots which are cut twice or thrice a year in the ſame manner, ſo that they reſemble beeſoms rather than the bearing parts of fruit-trees, and what little fruit they produce is not good, being generally ſmall and cracked.

As ſome parts of the ſtem are in an horizontal poſition, being turned in that manner, in order to procure new horizontals from them, to furniſh the tree with young bearers, they will be apt to put forth ſhoots every year; therefore when a tree has a good crop of fruit upon it, and ſhoots proper for new horizontals, then part of the old ſtuds that are near the ſtem, and barren, ought to be cut out, after they have once born, in order to make the fruit larger, for old ſtuds that have born ſeveral times never yield ſo good fruit as thoſe that are young; ſo in this caſe, it is proper to take out the old ones that the fruit may be the better fed.

Let all branches which proceed from that ſide of the ſtem next the wall be taken off, for they are too watery, and were they to be laid horizontally, their collaterals would be very far from bloſſoming.

Let no other young ſhoots be left upon it than ſuch as are deſigned for horizontals when wanted, which ought to be kept nail'd upright to the wall, at ſeveral times in the ſummer, leſt they be broken by winds; let all others be rubb'd off as they put forth, eſpecially thoſe that break out on the forepart of the ſtem, and if ſuckers put out at the roots, let them be dug up.

If a tree has not made many ſhoots before the beginning of June, it is then too weak; and if it be very full of fruit take part of them off, for a ſmall number of large fruit is equal in weight to a greater number of ſuch as are ſmall, and the flavour of the former greatly excells that of the latter.

CHAP. XLII.

Winter pruning and nailing of a Pear-tree, upon a free-ſtock, when it is full grown, as in fig. 6.

THIS work may be done from the beginning of November to the end of March. A weak tree ought to be done firſt, and much thinned in the winter, by taking out part of the bearers; for in a weak tree there are no more young ſhoots left in the ſummer, than what are deſigned for new horizontals, which being laid in their proper places, as D, in fig. 6. then the greateſt part of thoſe old ſtuds upon the horizontals neareſt them muſt be cut off, otherwiſe they would too much ſhade the new ones.

It may be eaſily perceived what buds will produce bloſſoms, they are more globular than others, and in this caſe, they only ſhould be left on thoſe parts of the old horizontals which are neareſt the ſtem, where the young horizontals are interlaid; but near the extremities of the tree let all collaterals remain that are not too long for bearers, ſuppoſe the buds are too young for bloſſoming, as may be perceived by the ſhape and ſize of them.

If there have been young horizontals laid in two or three years before, which are extended nearly to the greateſt length allowed them, then the old ones neareſt them may be taken quite away; except they are likely to bear, and the young ones are not.

Every branch, &c. taken from a tree, muſt be cut off cloſe to the part from whence it proceeded; for when ſtumps are left, they are apt to produce a number of uſeleſs branches.

'Tis very improper, when trees appear too vigorous, to leave their branches of any kind too near each other, for if they are, they will ſhoot more in length than otherwiſe, and be more backward in bloſſoming, to which they ought to be brought as ſoon as poſſible, for nothing checks the vigour of trees more than bearing.

Thoſe parts that are deſigned for bearers ſhould be nailed depending about ſix inches apart. If there be too many, let the worſt be cut out; and if any of them be longer than the ſpace between the horizontals, let them be turned like the new ſtems in this plate.

If there be room upon the walls, let the horizontal branches be continued, till they nearly touch the other trees, then let them be turned downward, as E in fig. 6. to the middle of the ſpaces between them, and let them be then nailed horizontally towards the ſtems. I have obtained good fruit by this method.

If there be any branches which were cut the laſt ſummer to about nine or ten inches long, let them be taken quite out, otherwiſe they will produce new ones, and ſhade thoſe that are preparing bloſſoms; but let as many as poſſible of theſe branches which proceed from the ſtem, and were nailed up in ſummer, continue, and let ſome of them, i. e. the ſtrongeſt, grow above the wall, but they muſt be nailed near the top with ſtrong ſhreads, leſt the winds tear down the whole tree. The cutting of ſuch trees ſhould be deferred to the latter end of March.

By theſe means a vigorous tree will bear, and then thoſe branches that were left for waſte pipes upon the ſtem, or other parts, may be taken out, for the ſap that ſupported them will be wanted in the fruit.

When a tree is come to a ſtate of bearing, it is not proper to let too much wood remain in the winter: all thoſe parts of the bearers that produced fruit the laſt year ſhould be taken out, and none left but ſuch as will immediately bloſſom, or ſuch ſtuds as are too young; and if there be room, let new horizontals be laid, for thoſe that are young will afford much the largeſt and beſt flavoured fruit.

It is not the great age of a tree which renders the fruit bad, but the age of thoſe parts of it on which the fruit grows; neither, when fruit is not good, is it always owing to the ſeaſon, climate or ſoil, or its own natural bad qualities, for I have ſeen and taſted both good and bad pears which grew upon one and the ſame tree, though in different parts of it, ſo that no kind of pears ought to be condemned, till the tree be obſerved, and the ſoil and aſpect in which it grows.

CHAP. XLIII.

Pruning of a Pear-Tree on a Quince Stock.

THE management of a pear-tree upon a quince ſtock, differs but little from that of others; the length of the horizontals and their diſtance from each other ſhould be about a third part leſs than thoſe upon free ſtocks, whether they be againſt walls or eſpaliers.

They are more proper for eſpaliers than thoſe upon free ſtocks, becauſe they don't grow to ſo great a height, by which they are leſs ſubject to be broke by the violence of the winds.

When theſe trees are dreſſed in the winter, if the extremities of the ſhoots be cankered, let as many of them be taken out as can be ſpared, and the others cut ſomewhat below the cankered parts.

When any of the horizontals are cankered, take off the rind as far as the quick, and let all the moſs be clean ſcraped off, both from them and the ſtem; which may beſt be done in wet weather; but if the weather is dry at the time of dreſſing, then moiſten the trees well with netting or brine, and when the moſs is all taken off, waſh them again with the ſame ſort of liquor, which will prevent moſs from growing upon them for the future; by this means the eggs of caterpillars concealed in the cavities of the old bark, are in a great meaſure deſtroyed.

When a tree is too weak, ſometimes it may be ſtrengthened by raiſing earth about the ſtem above the place where it was propagated upon the ſtock; for the upper part will make roots into it, which may either be deſtroyed after, or continued, according as the ſtrength of the tree requires: I have found this method very ſerviceable in preventing ſhoots from cankering at their ends, and the fruit from being ſtony; which often happens upon quince ſtocks.

There are ſome kinds of pears that are much ſhorter ſhooters than others; when theſe are propagated on quince ſtocks, and planted with only one ſtem againſt a wall of the lower ſort, before they can cover the ſpace deſigned for them, the ſtuds and bearers neareſt the ſtem will be of too great an age to produce good fruit; when this happens, the tree ſhould have two ſtems like a peach, and thereby the bearers may be kept properly young. If one ſide of the tree be weaker than the other, they ſhould be cut as two ſeparate trees according to their ſtrength; this will occaſion one ſide of the tree to be lower than the other, but it is better to have branches of equal and proper ſtrength, though the ſides of a tree be unequal in height, than to have the fruit on one ſide much inferior to that on the other in goodneſs.

CHAP. XLIV.

Obſervations on old Pear-Trees, and others that are not in good order, and how they are ſometimes extravagantly thrown away.

WHAT I have ſaid before upon pruning and nailing of pear-trees, only relates to ſuch as have been planted no more than five or ſix years; but older trees are many times capable of being improved, tho' I have known ſome gentlemen been perſuaded to throw them out, and plant young ones in their ſtead. Nay, I have lately ſeen young trees planted between old ones that actually ſtood too near each other, in an eſpalier: this I count a worſe practiſe than the former; for the young ones were hindered from thriving by the roots of the others, and likewiſe by the branches hanging over them.

The reaſons given for deſtroying old trees are generally theſe two, viz. the one for not bearing good fruit, and the other for bearing too little or none. But before

I proceed any further with the ordering of old trees, I muſt beg leave to ſhew ſome reaſons why the natural qualities of fruit are often miſtaken, and called bad, tho' of the beſt kinds. I have known the virgoulewſe, colmar, and winter bon chretien, called and eſteemed only fit for baking; this was owing to their not being palatable in the ſummer or autumn months; and ſometimes good ſorts are deemed otherwiſe, when a tree is too full of old ſtuds.

When good kinds of fruit are thus falſely condemned, I look upon it to be owing to ſome part of the great number employed in pruning; many of which have only ſerved an apprenticeſhip to a market gardener, whoſe employment was only in raiſing common kitchen ſtuff; for there are ſeveral youths, during the whole time of their ſeven years ſervitude, never have an opportunity of knowing any thing of choice fruits, but are kept to hard labour in the kitchen garden only, and may undoubtedly know that branch of buſineſs extremely well; but, after their apprenticeſhip is ended, are deſirous of going into a gentleman's ſervice, and knowing that they ſhall be well maintained, are content to ſerve for ſmall wages; (which makes others leſs eſteemed, whoſe ſkill and underſtanding is much ſuperior, becauſe they expect better pay, and perhaps are leſs laborious in digging, &c.) Such young men are very proper ſervants for thoſe gentlemen who are ſkilled in gardening, and chuſe to give directions, but not for ſuch as do not underſtand it, or will not be at the trouble of directing; tho' many are deſirous to hire their ſervants as cheap as poſſibly they can.

I am much againſt deſtroying of old trees if they be tolerably healthy, becauſe the planting of young ones in a proper manner is expenſive, as old borders for that purpoſe ought to be trenched all over; and after that is done, admit the trees thrive well, they can't be brought to bear a large quantity of fruit ſo early as the others.

If an old tree be of a good kind, it may be brought to bear good fruit by the rules I ſhall hereafter lay down for pruning; admit the ſoil it grows in is ſuitable; and if not, it may be improved by the me-

methods preſcribed for making and ordering of borders.

If an old tree is of a bad ſort, I would have it grafted in ſeveral parts with any ſort deſired, whereby it will cover the wall again ſooner than one new planted; and the owner will be certain of the right kind.

This may be practiſed either upon wall trees, dwarfs, or eſpaliers, admit they are either upon pear or quince-ſtocks; and apples may be ordered the ſame way either upon the crab or any other ſort of ſtock.

If the plum, or cherry, are good ſorts, and bear but little fruit, they may be helpt in the ſame manner as pears; but if they are of a bad ſort, I would not have them grafted, except they are ſound at the heart, as but few old trees of theſe kinds are; and when this is the caſe, 'tis much better to take them away, and plant others in their ſtead. Tho' 'tis obſerved by many, that young trees will not proſper in the borders where others of the ſame ſpecies have lately grown, yet I have found it otherwiſe; and thoſe who have a mind to try, I would adviſe them to mix the ſoil of the borders in the ſummer, with thoſe ingredients I have preſcribed for improving borders, that the ſalts contained in them may be ſufficiently diluted before the trees are planted.

CHAP. XLV.

Pruning of old Pear-Trees in the ſummer, that have not been regularly trained.

I Have ſeen ſome few old pear-trees, with their branches laid level, tho' their horizontals and bearers have ſeldom been renewed; but their collaterals have been ſtopt till they have formed a large and uſeleſs buſh, as I have mentioned in other places. The form of ſome other old trees is meerly accidental, but generally furniſhed with buſhes like the former.

I have had the management of both, and in two years time have brought ſome of them to bear good fruit; and in three or four, plentifully, with their branches in a tolerable ſhape.

Having ſaid thus much concerning the ill ſhapes of old trees, I ſhall now ſhew how to prune and nail them. Suppoſe this work of pruning is begun in May, and there is a large crop of fruit, then take off part of it, and all young ſhoots, except thoſe putting out of the extremities of the old horizontals and irregular ribs, or ſuch as grow from the ſtem, or other parts where they may be diſpoſed of for horizontals, which ſhould be nailed up till winter; and take off ſuch parts of the buſhes as would ſhade them; and if many others be taken off, the fruit will be much larger and better for it.

If a tree has but little fruit upon it, ſhoots muſt be preſerved near the ſtem for horizontals, as before directed, and alſo thoſe proceeding from the extremities; and if there are any vigorous ſhoots, they muſt be ſhortened to about ſix inches long, and left till winter.

CHAP. XLVI.

Pruning of old Pear-Trees in the Winter, that have not been trained up regularly.

WHEN old trees are vigorous, and the ſpace of wall aſſigned for each is not ſufficient to contain their branches, when properly extended, take away every ſecond or third tree according as room is wanted, before their winter order is given them; and then it may be the better known how to manage thoſe remaining. And firſt, where the old branches are placed horizontally, lay the new ones left in the middle of the tree in that poſition between them, as before directed; but if the old horizontals are too near one another, and the tree not vigorous, part of them may be cut away to make room for the new ones; as alſo ſuch buſhes as would ſhade the young horizontals. There ſhould be nothing left in theſe places but what will bloſſom that year, neither too many buds for that purpoſe.

Thoſe young branches left at the ends of the horizontals ſhould be extended forward, if there is room; if not, they may be turned and diſpoſed of as directed at E. in Fig. 6. and the buſhes growing near them ſhould be thinned, to prevent them from ſhading the branches from the ſun's rays.

If there is not a ſufficient number of new horizontals, take pieces out of the ſides of the ſtem where they are wanted; for by cutting the tree in this manner, young ſhoots will grow near the parts cut, both above and below.

Such trees as have neither ſtems nor horizontals regular, muſt be managed ſo as to have both produced from new ſhoots; the ſtrongeſt ſhoot in the middle of the tree, and neareſt the bottom, ſhould be left for a ſtem, and turned as in Fig. 5. the old branches will doubtleſs be in its way, and to nail them acroſs one another is very improper in regular trees, but as it can't be well avoided in this caſe, let it therefore be nailed and placed over or under the old branches as is moſt convenient, and the beſt of the old branches laid horizontally a foot aſunder at leaſt, and all the worſt ſhould be cut out, and ſuch as grow the moſt contrary to the ſhape deſired, and likewiſe old ſtuds that would ſhade the new horizontals. This work ſhould be repeated annually as the new ſtem, and the horizontals proceeding from it, increaſe in length, till they form a tree as regular as the ſixth figure, which may be performed in a few years, provided they are ordered like thoſe of a young tree. When a large branch is taken off, it muſt be done cloſe to the part it grows from, and made ſmooth with a ſharp chiſſel, then covered over with pitch and roſin of each an equal quantity melted together, and left as much reclining as poſſible to prevent its taking wet. What I have ſaid upon wall-trees of this ſort, I hope will inform any one how to improve dwarfs, &c. either of apples, plums, or cherries.

CHAP. XLVII.

Pruning of Mulberry-trees againſt Walls.

AS mulberry-trees are ſometimes planted againſt walls, and by that means made to produce excellent fruit, I think their nature of bearing ought to be obſerved, and the manner of pruning and nailing. They produce their fruit at the lower end of a new-made branch, that is, the fruit and branch that bears it are both of the ſame year's production; but theſe branches don't grow that year from the rind of either ſtem or horizontal, but from buds near the extremities of branches made before. By theſe remarks, it is plain they will not bear till the ſtuds be more than a year old, without having their ends cut off; for ſhortening the ſtuds often cauſes them to put out too many ſhoots, and too ſtrong for bearing, and ſo near one another that they can't receive proper ſupport from the ſun and air. The figures in the third plate will ſerve very well for ſpecimens to direct the ſhape of a mulberry-tree by, and the manner of pruning is the ſame as for pears upon quince-ſtocks, and planted the ſame diſtance from one another; tho' in time they will become large trees, and then more room muſt be given them.

CHAP. XLVIII.

Pruning of Currant-trees.

THE method of pruning a currant-tree planted againſt a wall, is much the ſame as for the laſt, only that currants don't require above one fourth of the wall allowed for mulberries: they produce their fruit upon ſtuds of four or five years old, but that upon collaterals made the year before is the largeſt and beſt. By taking off the old ſtuds, young ones are recovered in the ſame places, provided the old ones are not cut off too cloſe to the horizontals; and if the horizontals be renewed when three or four years old, the fruit will be much larger than thoſe upon the old parts of a tree.

CHAP. XLIX.

Pruning of Apples upon Paradiſe-ſtocks.

AS apple-trees are ſometimes planted againſt walls, and will bring their fruit to perfection upon any aſpect, I will here give directions for pruning them. Some kinds of apples, eſpecially the nonpareil, will ſometimes bear a ſmall number of fruit upon young wood, or ſhoots of the laſt year's production; but they generally bear moſt upon ſtuds proceeding from branches of two, three, or four years old, in the very ſame manner as pears, whoſe management has been largely treated of before.

What has been ſaid concerning pears upon quince-ſtocks, as to their diſtance from one another, and the manner of pruning and nailing them, and dreſſing the cankered parts, are the beſt methods I can give for apples, and therefore need not be again repeated.

CHAP. L.

Pruning and Nailing of Cherries againſt Walls.

THE ſeaſons for pruning and nailing of ſtone-fruit, are December and January, or the beginning of February. Cherries of different kinds require different ways of pruning and nailing, by reaſon they bear their fruit upon wood of different ages; the morella and baremdam bear moſt of their beſt fruit upon the extremities of the laſt year's ſhoots, and ſhould therefore be cut and nailed every year ſo as to procure a ſucceſſion of them: the rules for that purpoſe are given in pruning of peaches; but the bearers of theſe need not be nailed to the walls as thoſe of peaches are, tho' the ſtems and horizontals muſt, to prevent the winds from breaking them.

The little May cherry is not much unlike the former as to its nature of bearing; but the ſmall bearers of this ſhould be nailed to the wall, to forward the ripening of the fruit. When theſe three ſorts of cherries are planted againſt low walls, ſo as that their diſtance from one another is more than ten feet, each tree ſhould then have two ſtems.

All other kinds of cherries that I am acquainted with bear differently, for they produce the moſt fruit upon ſtuds proceeding from wood that is two or three years old, or at the lower ends of the laſt year's ſhoots; though they are often ſuffered to have ſtuds much older, which will bloſſom and bear, yet the fruit is never ſo large as the other. The rules laid down for pruning and nailing pears upon quince ſtocks, will ſerve alſo for theſe ſorts of cherries; with this difference only, that the horizontals of theſe muſt be laid at diſtances from one another, according to the ſize of their leaves, which will be ſeen before new horizontals are fit to nail: the diſtance from one another may be allowed from eight to twelve inches. In nailing theſe or any other kinds of ſtone fruit, take care that the rind be neither galled nor bruiſed by either hammer or nail, for this will cauſe gum to iſſue out from the wounded part, which either kills or weakens the branch it proceeds from. I have, in the former part of this volume, aſſigned the ſpace of wall proper for cherries, but the diſtances from each other are various, according to the heights of walls; and when they are planted twelve feet or more aſunder, they ſhould have two ſtems, for reaſons before given concerning pears upon quince ſtocks. The cornelian cherry is generally planted a ſtandard, and when it is not too much crouded, will bear fruit, but not ſo good as when cut and nailed by the rules given for the morella.

CHAP. LI.

Pruning of Plums againſt Walls.

THE beſt kinds of plums are, in their ſeaſon, as noble fruit as any our climate produces, and they well deſerve a good wall; but without proper management by pruning and nailing, they are often very bad, having but little pulp, and that not much better taſted than the gum iſſuing out of a wounded branch. Weakneſs is generally the cauſe of this imperfection in the fruit, either in the whole tree or elſe in part thereof, occaſioned either by its being wounded, or the bearers being too old, and ſometimes by bearing too great a quantity of fruit, either on the whole tree, or ſome particular parts.

I have often obſerved, that plum-trees produce the beſt fruit upon the youngeſt bearers; except too great a quantity is ſuffered to remain, without being properly thinned; which ſhould be done about the latter end of May, by taking off the ſmalleſt with the point of a ſharp knife. By theſe obſervations, I find it beſt for the procuring of good fruit, to keep the horizontals and bearers young, and likewiſe thin the fruit when there is occaſion: but when there is a weakneſs proceeding from the root, it ſhould be relieved by the methods preſcribed for managing borders.

As to what is required more in the pruning of plum-trees, may be learned from the rules laid down for pears upon quince ſtocks, or for cherries in the laſt chapter.

Plate IIII

Fig. 6.

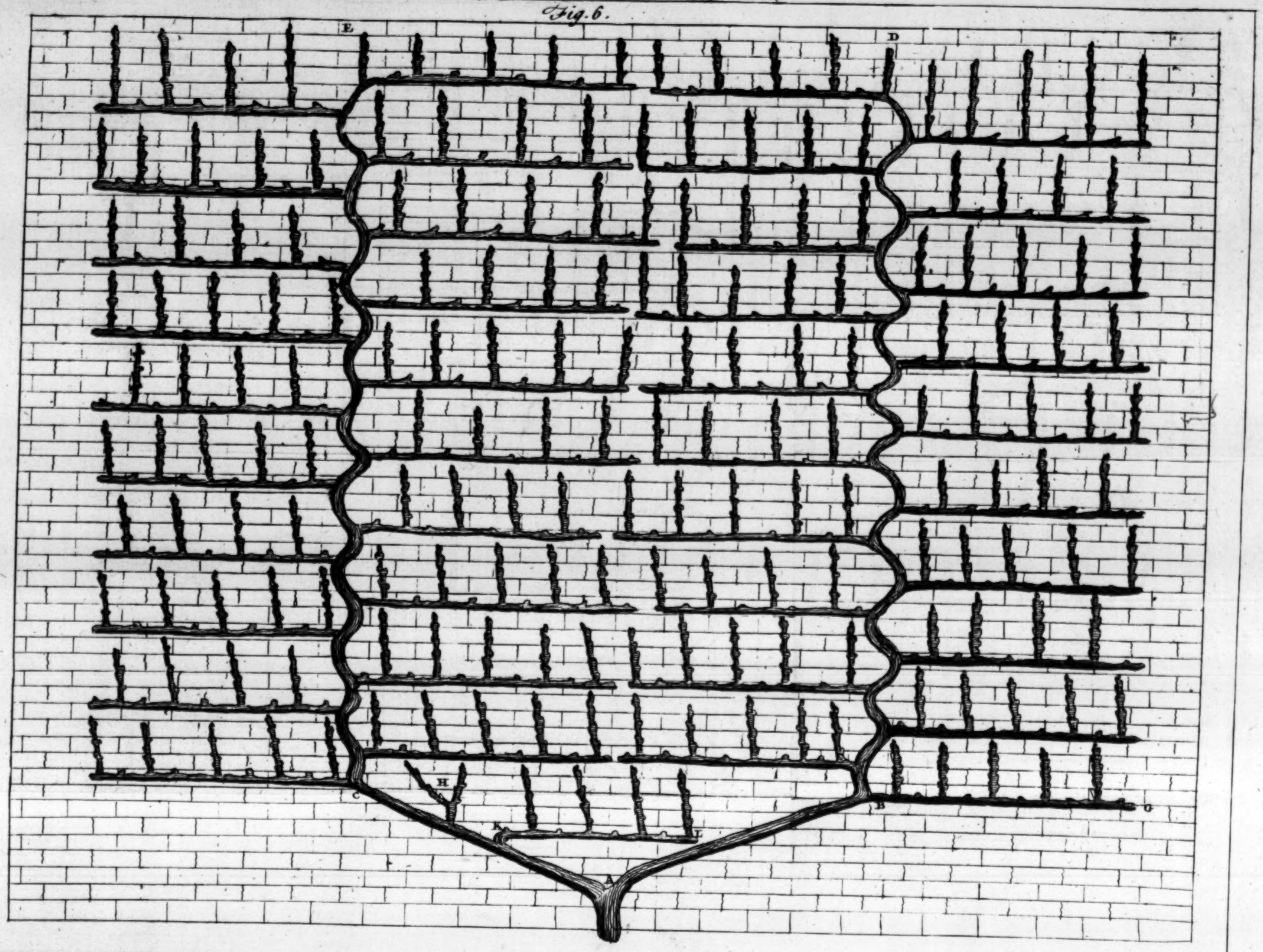


Fig. 5.

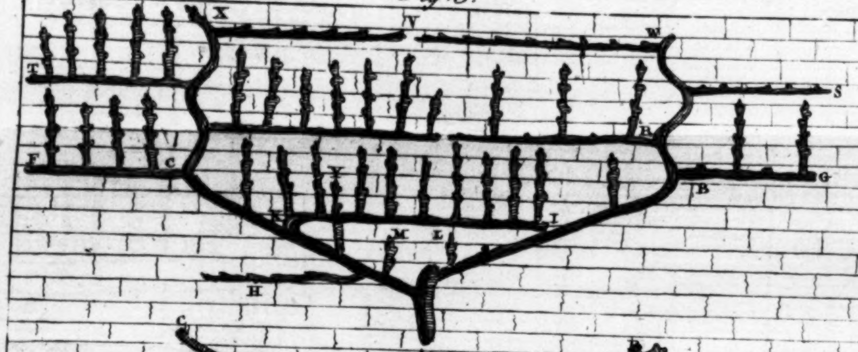
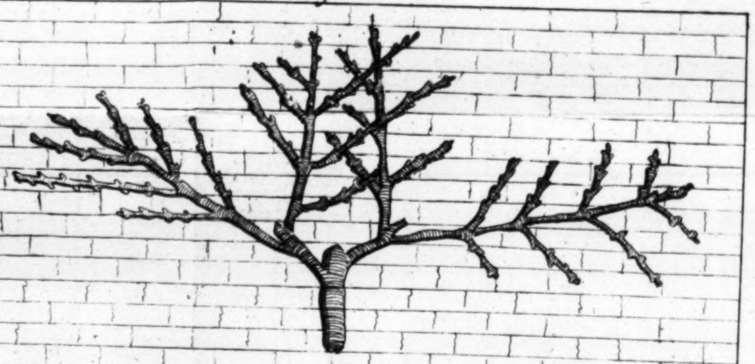


Fig. 3.



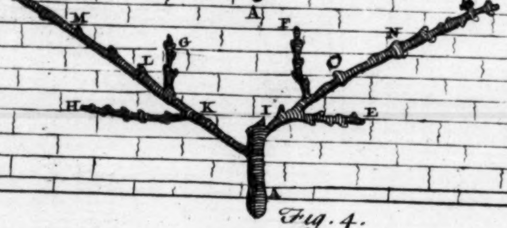


Fig. 4.

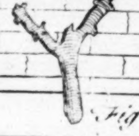


Fig. 2.

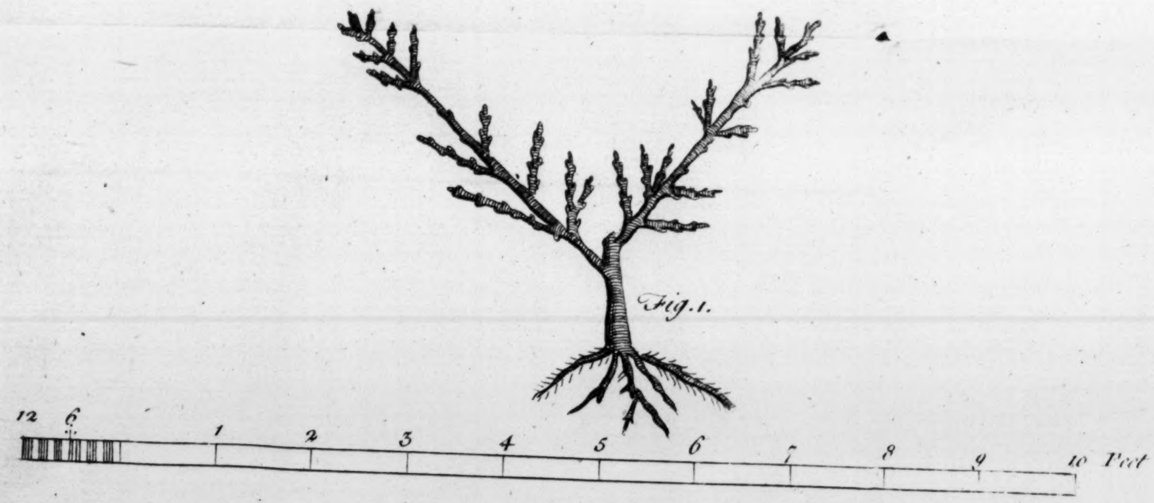


Fig. 1.

[illegible] sculp

CHAP. LII.

Explanation of the fourth plate.

THIS plate repreſents either a peach, nectarine, or apricot tree, at different ages.

Fig. 1. is one taken from the nurſery.

Fig. 2. is the ſame cut, according to cuſtom.

Fig. 3. is the ſame as Fig. 2. with the branches it may be ſuppoſed to have made in one year.

Fig. 4. is the ſame as Fig. 1. when cut and nailed after my method.

Fig. 5. is the ſame as Fig. 4. after it has been planted one year. On one ſide of this tree there are all the branches it was ſuffered to make; on the other ſide it is cut and nailed for the winter order.

Fig. 6. is a tree full grown.

I have before explained what parts of a tree are called bearers, horizontals, and ſtems, and need not repeat it: but in theſe there are two parts that produce horizontals; theſe I call ſtems, though there was only one in ſome of the laſt, which was advantageous in pears, plums, &c. as I have already demonſtrated under the head of pruning pears.

CHAP. LIII.

On Pruning and Nailing a Peach-tree at the time of Planting.

AS peaches are naturally inclined to produce their ſhoots in an erect poſition, and after their branches are laid horizontally they grow very little more in length; ſo if there had been but one ſtem, the length required for each horizontal would have been greater than any ſhoot of one year's production would reach (except the diſtances betwixt the trees be much leſs than twelve feet): and as theſe ſhoots increaſe but little in length after they are ſo laid, then conſequently part of the wall muſt be naked, if there was only one ſtem; but by having two ſtems, the lengths of the horizontals required are but half as much as they would have been, had there been only one, where the ſpaces are the ſame betwixt each tree; but where the walls are of much greater heights than twelve feet, then the diſtance betwixt each tree muſt be leſs, and one ſtem will be more proper than two; for the ſpaces being ſo little, the horizontals would be ſhort, and conſequently cauſe their collaterals to be too vigorous, by being few in number upon each.

The propereſt time for winter-pruning of peaches, &c. that have been planted the ſame winter, is in February; for then a better judgment may be formed of what parts are dead, &c. as I have before obſerved, juſt after the rules for planting.

The ſeaſon for the winter-pruning of ſuch as have been planted one year, or more, is December and January, (if they be either weak or ſtrong) for before the beginning of December they have but ſeldom ſhed their leaves; and before they do that, it ſhews that the ſap in them continues liquid, and their pores are more open than they are immediately after the leaves drop off. As there is always a neceſſity of taking out ſome wood in the winter, it is moſt proper to do it at ſuch time as its parts are moſt compact, leſt too great a quantity of aqueous particles enter into thoſe parts of the trees where the amputations are made. In February there are viſible proofs of the ſap becoming more liquid than it was in January, by the buds being increaſed in bulk. This ſhews that the veſſels are more extended than when the buds were leſs, as at the time their leaves were newly ſhed. It is obſerved by many practitioners, to cut the ſtrongeſt trees lateſt in the ſpring, in order to abate their vigour; but it is an unprofitable cuſtom, eſpecially when the trees are young, and the walls covered but in part, for then trees of thoſe kinds cannot be too ſtrong, if rightly ordered by diſbuding in ſpring, and properly diſplaying their branches at all times of nailing; then the new-made branches will bloſſom the next year, from trees that are the moſt vigorous. A great diſadvantage attends the cutting of trees too late in the ſpring, or when their bloſſom-buds are either open or near it; for then they are in danger of being diſplaced more than when they are leſs. Upon a ſtrong tree there cannot be too many buds; for, by bloſſoming and bearing, their vigour will ſooner be abated, than by taking out or ſhortening ſtrong branches.

Before the trees are nailed againſt walls that are not more than twelve feet in height, the ſpace adapted for each tree muſt be divided into four equal parts; that is to ſay, two on one ſide of the tree, and two on the other. At thoſe two diviſions next each tree, make marks upon the wall, from the bottom to the top, over which the ſtems muſt be carried; as from B to D, and from C to E, in Fig. 6. But the lower parts of the ſtems, as A B, and A C, muſt be placed inclining about thirty degrees, if the trees be ſtrong; but if they be weak, nail them more erect, till they produce ſhoots of a competent ſtrength, then they muſt be brought lower, to the poſition before mentioned.

If thoſe parts of the ſtems A B, and A C, were laid horizontally, they would be apt to put out ſtrong branches from their lower parts, which would prevent the ſap from moving with ſufficient force to their extremities, ſo as greatly to increaſe their lengths; and ſometimes they are killed by it; for, as I have before obſerved, their natural ſhape is much reverſe to a horizontal poſition: and when branches are ſo laid, they are as much diſpoſed to put forth ſtrong collaterals from their lower buds, as they are long ſhoots from their extremities; and when the ſhoots are many in number, thoſe at the extreme parts muſt certainly be ſhorter than if there had been no other but them upon the ſtem.

It appears by Fig. 4. that I leave the ſtems, the firſt ſpring after planting, of an uncommon length. There are many advantages obtained by this method, more than when they are cut ſhort; for thoſe branches proceeding from the former will be at a much greater, and a more proper diſtance from each other; and a wall may be covered much ſooner thereby. The life of a tree alſo is much ſafer, by the ſtems being of ſuch a length, than if they were ſhorter; for thoſe buds at the upper end of a branch are always larger, and by the ſap's motion eaſier opened, than the buds at the lower end, which appear leſs, and are more compact.

By ſhort cutting firſt after planting, I have ſeen trees killed; and others which have made but very weak ſhoots, when there were none but ſmall buds left on; for branches are often in ſuch proportion to each other, as the buds are which produce them; but when ſupplied with a greater quantity of ſap, their bulk and length are increaſed the more. And when, by ſhort cutting, there happens to be any of the larger ſort of buds remaining; then a tree ſhoots very luxuriantly, as it appears by the Fig. 3. whoſe branches are much too near each other.

When new planted Trees are cut the firſt time, it is proper to examine the upper ends of the ſtems; and if they be either dead, or appear unhealthy, then cut ſuch tops off ſomewhat below the diſtempered parts: if there are no ſuch occaſions, there is no need of ſhortening them; for, on all peach-trees, there are a great number of collaterals, from which a reduction of branches may be made, equivalent to their loſs of roots by removal, admit they were taken up, and planted as before directed.

Thoſe ſmall collaterals marked E F, G H, that are upon A B, and A C, in Fig. 4. having all healthy buds at their upper ends, are certain to put forth leaves ſooner than any other parts of the ſame tree; and leaves are of great uſe in vegetation, for they both exhale and imbibe, to the great advantage of thoſe plants to which they belong. When trees were planted early in the winter, I have ſometimes gathered fruit from ſuch branches the firſt year, either more or leſs, according to the ſtrength of the plant; but it would be improper to ſuffer ſo many to remain upon a tree, as would hinder it from making ſhoots fit for horizontals.

Thoſe collaterals which are taken off, muſt be cut about an inch from the ſtem or part they grow upon; then others will put out from buds at the ſides of the little ſtumps that are left, from which there will be an opportunity of chooſing branches to remain at the places where deſired; but all others ought to be taken off at their firſt appearance, for at this time of pruning all thoſe buds which put out on the under ſides of the ſtems ſhould be rubbed off, except one at the extremity of each, to make horizontals; and on the upper ſides, let four only remain upon each, that is to ſay, thoſe near B, N, O, I, upon one ſide, and K, L, M, C, on the other, with one at the end of each to lengthen the ſtems.

CHAP. LIV.

The Pruning a Peach-tree, the firſt Summer after planting.

IN the months of April and May, it may be diſcovered what quantity of fruit the tree is able to ſupport, and what number of branches of proper lengths for the uſes intended; if they be weak, diſplace part of the fruit firſt.

As to thoſe branches that may proceed from the two loweſt buds at I, K, I only deſign them for bearers the next year, which are not required to be more than a foot in length; but if they ſhoot ſtrongly, as though they would exceed it, then ſtop them at the length of two or three inches; but if none of thoſe above are likely to be two foot long*, then they muſt remain uncut.

At all other places where buds were left above I K, ſhoots will be required to make horizontals, and ſometimes they will put out collaterals the firſt ſummer; but if they are not all able to do it, take part of them quite out.

The principal parts, A B, and A C, muſt be ſeparately examined, for the thinning of one will not much relieve the other.

If there is a neceſſity of diſplacing any ſhoots, it ought to be thoſe on the underſides near B and C. And it will eaſily be perceived in a few weeks, whether the reducing of two branches only will give ſtrength to thoſe remaining ſufficient for the uſes they are deſigned; if not, then take away either one or both of thoſe branches at L and O, according as there is a neceſſity.

All fore-right branches muſt be taken away, or all others that appear uſeleſs.

All other branches muſt be nailed upright, to prevent the winds from breaking them, till thoſe deſigned for horizontals are grown almoſt to the length required.

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* Two foot or near it is the length required for horizontals.

The two ſtrongeſt branches proceeding from B and C, muſt be preſerved for ſtems, and ſhould be kept clear from all fore-right branches; and when the other ſtrong ones are full eighteen inches long, let them be nailed horizontally, leaving only their upper ends erect, which will encourage them to ſhoot more in length.

All buds and branches muſt be taken away from their under and fore-ſides, which appear the firſt ſummer after planting; and no collaterals ſhould be left nearer each other than the ſpace of three inches.

CHAP. LV.

The Winter-pruning of a Peach-Tree, that is more than one year old, according to Fig. 5.

THIS figure repreſents a tree with one ſide cut and nailed in a manner proper for its winter order; but the other is not, as appears by the ſide AB having fewer branches upon it than there are upon on the part A C; which has more than one half of its collaterals taken off, about an inch from the horizontals.

My reaſon for not cutting theſe collaterals cloſe to the part they proced from, is to procure a greater number of bearers the next year, there generally being on the lower end one bud, and ſometimes more, which produce ſhoots after cutting.

At this time of dreſſing, I think it is better to leave the bearers about ſix inches aſunder, nailed in an upright poſition, with long and narrow ſhreads, for broad ones are apt to ſpoil the beauty of the fruit, and ſhort ones to pinch the branches.

The upper ends of branches are the moſt certain to produce fruit, and ſhould therefore never be taken off if alive; for, the upper bud of every healthy branch always puts out leaves, which ſhelters thoſe bloſſoms neareſt them.

When ſome of the bearers are dead at the ends, occaſioned by blights, there may be a neceſſity of ſhortning them, and in ſuch a manner, that there ſhall be at their upper ends ſuch buds as will make wood; but after the trees have been ordered two or three years, according to the rules here given, they will generally be found healthy.

The ſides A, C, in the figure laſt mentioned, appears ſtronger than the ſide A, B, by its having produced more ſtrong horizontals; one of which is placed from K to I, and fills the firſt ſpace betwixt the ſtems; and when one ſide of a tree is much ſtronger than the other, its ſtem ſhould be laid lower, and that ſide which is weakeſt muſt be raiſed more upright.

At this time of dreſſing a tree, it is proper to examine the lower parts firſt, for they are moſt ſubject to want young wood; but if there is a ſufficient number of bearing branches, then thoſe which bore the laſt year muſt be taken out.

Branches betwixt ſix and twelve inches long are beſt for bearers, for they are generally furniſhed with ſtrong bloſſom-buds, and when they have been kept in ſummer the diſtance of three inches from one another, they will then have ſubſtance ſuitable to their length; and the ſtronger they are, the larger their tubes will be, and conſequently the ſap will circulate more freely, whereby the bloſſoms and fruit will be the better ſupplied with juices.

Bearers of the ſame lengths before-mentioned, furniſhed with triple buds, having a bloſſom bud on each ſide, will, in the middle, produce leaves to ſhelter the bloſſoms adjoining.

The old Newington, and ſome others, may have bearers left eighteen inches long, and the horizontals muſt be laid at diſtances accordingly; but where the horizontals are not far enough apart, the bearers may be laid ſo much leaning as the ſpaces require, or if there are too few in number, nail ſome long ones up curving like the ſtems. The firſt branches that I chooſe to take off from the ſide A C, are H and Y, which were left for bearers when the tree was planted, and in Fig. 4. are marked G and H. The next that are to be examined are thoſe at L and M, or any others that may chance to be near theſe places; for there ought not to be any branches left in them, but what are of a proper ſize for bearers; ſtrong ſhoots on the bottom parts of young trees ſo early after planting being very improper; for they are apt to rob thoſe above too much, except they are laid horizontally, in order to produce bearers where wanted; but that branch from I to K is as near the bottom as bearers ought to be, and all branches that grow lower ſhould be taken off: peaches are never good if they grow too near the earth. (I ſhall ſhew in another place, my method for covering the lower parts of a wall with vines.)

Thoſe branches at I K are collaterals made the laſt year, proper for bearers; but as they are more than ought to be nailed up in that ſpace, therefore a proper number of them muſt be ſelected for the purpoſe, and placed againſt the wall, about ſix inches aſunder, in an upright poſition; the reſt ſhould be ſhortened to about an inch from the horizontal, for reaſons before given.

All other parts on the ſame ſide of the tree, muſt be cut after the ſame manner as directed for I K. But it may happen ſometimes that the ſhoots made at the upper end of the ſtem are not ſo long as are required for horizontals; then they muſt be cut about four inches long, which will cauſe them to ſhoot ſtrongly the next ſummer, and ſometimes there are only two ſhoots inſtead of three long enough, then the ſhort one may be cut as others at U W and U X.

CHAP. LVI.

Of the ordering of Peach-Trees in Summer, when they have been more than two Years planted.

WHEN ſhoots are laid horizontally in winter, and have no collaterals upon them, as thoſe marked at U W and U X in Fig. 6. there muſt be left upon them in ſummer a number of branches in proportion to their ſtrength; that is, if you find they are likely to be long enough for bearers, let all that appear on the upper ſides remain, if not too many in number; and if either all or any of them are longer than is deſired, in the beginning of May let them be cut to the length of two or three inches, as directed before; and if there are too few, they muſt be ſtopt to increaſe their number, if they are ſtrong enough, as in all probability they will be;

but when there are many and ſhort, then they muſt be thinned according as there is a neceſſity.

All other works of diſbudding, &c. muſt be performed according to the directions given for the laſt ſummer, and the thining of fruit muſt be performed by the rules laid down for the purpoſe.

What has been already ſaid relates only to ſuch trees as have two ſtems at the time of planting; and when there is but one ſtem, it muſt be placed againſt the wall, in the ſame manner as one of the others, and a new one muſt be raiſed as ſoon sa poſſible from one of the loweſt buds, which are very apt to ſhoot ſtrongly, when their ſtem is planted ſo much leaning as AB or AC; and in all other reſpects it muſt be managed as in Fig. 4. and 5. of this plate.

CHAP.

CHAP. LVII.

The ordering of a Peach-Tree from the ſize of Fig. 5. till it comes to the ſhape of the 6th.

ALL the former methods of pruning muſt be obſerved, as alſo turning the ſtems, and laying the horizontals at the lengths and diſtances before mentioned, diſbudding as their ſtrength requires, and the fruit muſt be thinned where there is too great a quantity.

Some few inſtructions more will enable an obſerving reader to cover a wall, in the manner repreſented by plate IV.

When the horizontals don't afford ſo many bearers as are deſired, then cut them in May to the length of three or four inches, it will cauſe them to produce two apiece.

But if a ſtrong ſhoot appears from that end of the horizontal next the ſtem, let it remain whole, whether it is on the upper, nether, or foreſide; and this may be laid for a horizontal the next winter; and if it is furniſhed with collaterals fit for bearers, the old one may be taken out; but if it is not, lay it parallel with the other till the winter following, at which time it will without doubt be provided with bearers; then the old horizontal muſt be taken away, for two ought not to remain ſo near each other any longer than one ſummer. When there is not the number of young bearers you deſire at the time of winter pruning, and the old bearers have healthy ſtuds, it will be proper to let ſuch remain as can be placed upon the wall at ſix inches apart, without croſſing the horizontals above them; and if theſe ſtuds don't exceed two inches in length, they may be left unnailed. If in April, or later, any of the horizontals appear weak, then new ones muſt be provided by the methods before directed; but never chooſe a branch for that purpoſe, proceeding from the ſide of another next the wall; for they are always ſpungy, by reaſon the veſſels which ſupport them are deprived of the benefit of the ſun.

Trees ſhould be kept clear from moſs, and where a part happens to be wounded, the gum iſſuing out ſhould be ſcrapt off, together with all dead bark, and dry ſoot applied till the running of the gum is ſtopped. No ſuckers ſhould be ſuffered to remain growing from either the roots, or the ſtock. When a tree is weak, or not too luxuriant, with ſtrong ſhoots putting out in ſummer from the ſtem, at places where there are no horizontals required, they muſt be taken off as ſoon as perceived.

But when a tree is too luxuriant, and produces bearers of greater lengths than deſired, ſuch ſtrong ſhoots may be left on all ſummer; but they muſt be ſo placed to the wall, as not to ſhade other young ſhoots deſigned for uſe. In both ſummer and winter nailing, let the ſhreads be of ſufficient length, for all ſmall branches ought to have as much room to ſpare at the time of nailing as will contain a perſon's little finger. In the ſummer I chooſe to make uſe of ſmooth ſtraight rods, to confine the young ſhoots to the wall, rather than any other method, by reaſon they get more air, provided the rods are ſo nailed with long ſhreads as to be far enough from the wall, that the young branches be not bruiſed betwixt them.

CHAP. LVIII.

Upon Pruning and Nailing ſuch Peach-Trees as have been irregularly cut before.

WHAT has been ſaid on this ſubject only relates to ſuch trees as have been trained up from the time of planting, according to the methods before directed; but as this treatiſe may probably come into the hands of thoſe who have old trees under their care, it will be proper to give ſome directions for the management of them alſo: for I have ſeen many trees in a very weak and miſerable condition, ſome of which have been planted twenty years, and of all ages under.

I will begin firſt with the pruning of a weak tree in the winter ſeaſon. The manner of ordering their roots, and preventing of blights, are mentioned in the directions given for managing borders. When weak trees are furniſhed with ſmall ſhort branches,

ches, having many of their ends dead, and thoſe which are alive full of weak buds, neither fit to produce good fruit nor ſhoots, it is too often the cuſtom to cut the branches ſhort, and leave many upon the tree; but it is many years before a tree is recovered by this practice, and perhaps never; for ſhortening the branches increaſes their number, and by being too near one another they become weak, becauſe the ſun and air have not free acceſs to all parts.

If there are any branches tolerably ſtrong, made the laſt year, near the bottom of the tree, they muſt be diſbudded and nailed like the ſtems of thoſe trees new planted, and all others muſt be cut off that would hinder them from being laid in a ſuitable poſition, without croſſing one another: if ſuch ſhoots cannot be attained, then chooſe on each ſide one, of the ſtrongeſt and healthieſt old branches, and cut off either all or moſt of the ſmall ones from them, and nail them up in the manner of ſtems, in order to raiſe a tree like thoſe in the fourth plate, and every year, as the new made branches increaſe, take away the old ones to make room: other branches near the tops of weak trees muſt be ordered in a different manner; ſuch as have dead tops ſhould be taken off, and thoſe left for bearing muſt be nailed upright to the wall, the diſtance of ſix inches from one another.

If old trees are full of ſtrong wood, and but little or none prepared for bloſſoming, it ſhews that they are either planted too deep, or have been improperly cut. If their large ſhoots proceed from too deep planting, the directions given for ordering of borders will relieve them; and if they are ſhaded by others, 'tis eaſy to know what muſt be done. But if their luxuriancy is cauſed by ſhort cutting and improper nailing of ſtrong branches, then other methods muſt be uſed for their relief: firſt examine the bottom, and nail up two ſtrong branches for ſtems, and cut all others out of their way; then the ſtrong branches above muſt be laid horizontally, at ſuch diſtances as that the bearers proceeding from them may be nailed upright without croſſing the horizontals above them; and if there is not room upon the wall to place the branches at proper diſtances from one another, then let the ſtrong ones at top grow above the wall; but they muſt be nailed with ſtrong ſhreds, leſt they ſhould be torn from the wall by the winds; and if any of thoſe branches project over the lower parts of the tree, cut them off cloſe to the part they proceed from. Let thoſe above the wall remain, till the others below have weakened themſelves with bearing. But as the new-formed ſtems increaſe in length, and put forth horizontals, others that are in their way muſt be taken off.

It is alſo proper to leave ſtuds unnailed, of two or three inches long, upon ſuch parts as were nailed up for bearers the year before; they will greatly check the vigour of a ſtrong tree, whereby it will ſooner produce fruit.

If there is not a ſufficient quantity of wall for each tree, that is, one hundred and twenty ſuperficial feet, then it is neceſſary to take ſome of them away, to make room for the others. It is better to have a deal of fruit upon a few kinds, than trees of many kinds and but little fruit.

If ſuch trees as are planted againſt arches are too vigorous, cut off the roots on the north ſide of the wall; which may be repeated annually, till their luxuriancy is abated.

Though peaches and nectarines are the moſt difficult of any wall-trees to keep in order, yet I have found great advantage by uſing the methods here preſcribed; and doubt not but others will have the like ſucceſs, if they ſtrictly obſerve what is ſaid concerning pruning, diſbudding, preparing of ſoils, manuring, watering, &c.

CHAP. LIX.

Upon Pruning and Nailing an Apricot, and Almond-Tree.

THE figures in Plate IV. will ſerve alſo very well to repreſent an apricot and almond of different ages, as well as a peach, or nectarine, and the manner of pruning is pretty much the ſame for all. The greateſt difference that I obſerve between them, is in the autumn ſhoots, and collaterals proceeding from the ſides of ſhoots of the ſame ſummer's growth; for thoſe of the apricot have generally fewer bloſſom-buds, and are more liable to be killed in the winter, than thoſe of the peach and nectarine. If apricots are not prun'd till the latter end of January, it may then be perceived in the moſt part of them whether they will live or die; for though ſome living ſhoots appear as bright as the others, yet if weak they will retain a much greater mixture of green, and not ſo brown as healthy ones; and ſuch as are dead will be black, either all over, or by ſpots. When theſe autumn ſhoots proceed from the ends of others, they ſhould always be cut off a little below the joint, which is eaſily diſcovered by the difference of colour: the parts below are pretty certain to bear, and thoſe above generally die, eſpecially if they are ſhortened. But ſuch autumn ſhoots as are healthy, and grow from new horizontals, if in places where bearers are wanted, they muſt be nailed up to the wall in the ſame manner as peaches, without ſhortening, for that is apt to kill the ſmall branches of the apricot. All ſuch collaterals as look tainted, muſt be cut off cloſe to the horizontals; and if the ends of the branches deſigned for ſtems or horizontals appear black, they muſt be alſo taken off two or three buds below the tainted place, otherwiſe the mortification will deſcend downward, and deſtroy the greateſt part of the branch.

In the next place it muſt be obſerved, that apricots ſhould always have the healthy bearers left on two years together; for they are oftentimes furniſhed with ſhort ſtuds the ſecond year, which are more certain to produce fruit, than thoſe that are longer, and if not more than three inches long they need not be nailed to the wall.

As to ſtems and horizontals, they muſt in all other caſes be managed in the ſame manner as directed for peaches; and the horizontals of different kinds muſt be laid at diſtances from one another, ſuitable to the natural growth of every ſort.

The ſtrong branches of an apricot tree are ſubject to iſſue out gum, whereby they are often very much weakened. Theſe eruptions generally happen at places where the rind is wounded, and there is for the moſt part a piece of hard dead bark ſurrounding the wound firſt made, which prevents it from healing, and will in time kill the branch if ſuffered to continue upon it; therefore this grievance ſhould be removed as ſoon as diſcovered, by cutting away all the dead wood and rind to the quick; after which, the wound muſt be covered either with pitch and roſin melted together, of each an equal quantity, or elſe with dry ſoot. It will not prove mortal in caſe you are obliged to cut the branch three parts through, in order to take out the dead, but will ſoon heal up; whereas if it is ſuffered to remain, that part of the branch above will ſoon die. Apricots muſt in all other reſpects be pruned and diſbudded like peaches; and alſo their fruit thinned after the ſame manner, in proportion to their natural ſize.

But obſerve that apricots require more water than peaches and nectarines, and where there is a full crop of fruit, if the ſeaſon is dry, they muſt be watered plentifully for the ſpace of a month before they are ripe; otherwiſe they will be both ſmall and ill taſted.

An old apricot-tree that is in an ill ſhape may much ſooner be brought to a deſired one than a peach, for it puts out ſtronger branches, with which may be formed new ſtems and horizontals.

Though almonds will bear very well on ſtandards, and during the time of flowering make a beautiful appearance in wilderneſs quarters, &c. yet they are ſometimes planted alſo againſt walls, and may be pruned in the ſame manner as directed for apricots, but may have their ſtuds or bearers of ſix inches long left unnailed.

CHAP. LX.

Of the Thinning of Peaches, Nectarines, Apricots, and Almonds.

WHEN there is too great a quantity of fruit ſuffered to remain upon any part of a tree, it is not ſo good as if there were only a proper quantity left on, and ſometimes a tree becomes weak by bearing too plentifully.

All fruits ought to be thinned according to their natural ſize; for there ought to be fewer left upon a bearer of larger ſorts, than on thoſe of a nutmeg-peach or other ſmall kinds; the length of the bearers ſhould likewiſe be conſidered, as alſo of the horizontals on which they grow, and the quantity of fruit upon all the bearers proceeding from one and the ſame horizontal. Suppoſe a horizontal is three feet long, with ſix branches upon it, (which there ought to be if the tree is healthy and ſtrong) then of the ſmaller ſorts of peaches there ſhould not be more than twenty or twenty-five left upon all the bearers; but if there is fruit only upon ſome of them, then there muſt not be ſo many left on; for four or five are ſufficient for one bearer, and as many as will be well flavoured.

The largeſt ſorts of peaches and nectarines ſhould not have above a dozen left upon the ſame quantity of tree before mentioned, and theſe not thicker than two on a bearer; but weak trees or branches muſt have fewer left on, in proportion to their ſtrength.

The thinning of fruit ought not to be done all at one time, for ſometimes many will die after they are a quarter grown, which looked thriving before.

When there is a large quantity of fruit ſet, there is generally a great part of them in cluſters; it is therefore neceſſary to take ſome off when they are as large as horſe-beans, but always leave ſuch as are covered with leaves, or rather thoſe growing at the ſame joint, where there is either a ſhoot, or ſome leaves, for they make better fruit than others.

Fruits are thin'd the beſt either with a very narrow-pointed penknife or ſciſſars, for by nipping them off with the thumb and fore-finger, thoſe deſigned to be left on are often diſplaced, as alſo the young branches and leaves.

Tho' I adviſe to thin fruit at different times, yet it ſhould not be done later than the month of May; for if they are ſuffered to grow pretty large they rob one another, and none ſhould be left on ſo near together as to touch before they be full grown, for they are apt to throw each other off, or at leaſt to ſpoil their ſhapes. Beſides, they never come to the ſize they would otherwiſe do, and large fruit when ripe is always

ways the beſt flavoured, and in wet ſeaſons thoſe that are ſingle don't rot ſo ſoon as when two or more grow near together, either peaches, nectarines, or apricots: and though the fleſh of almonds is not valuable to eat, yet when the fruit is large the kernels are better; for which reaſon, I think it is proper to thin them, and they will likewiſe be leſs ſubject to drop from the tree before they come to their proper ſize.

CHAP. LXI.

Planting of Vines, and how they are raiſed.

IN treating upon the planting of fruit-trees, in a former chapter, I have not given proper directions concerning vines, or ſuch things as have only flaccid roots at the time of replanting: I will therefore, before I ſpeak of pruning, lay down proper methods for planting.

And here obſerve, that what hath been already ſaid concerning the packing of other kinds of trees, is proper alſo for vines, ſo is likewiſe the time of doing it the ſame, and covering them with wet moſs, which ought to be done immediately after they are taken up, whether from the mother-plant or from beds.

When they are brought to the place where they are to be planted, the ſtrong part of the root from which the fibres proceed, muſt be cut at the end, like the ſtrong roots of other trees, but the other parts may remain as you find them, it being difficult to know which are dead; and the method of planting them prevents the living roots from being injured by the dead ones putrefying in the ground.

There is no occaſion to make a large hole for the reception of the root, but only mark upon the border how far the woody part extends itſelf when placed parallel to the wall, at the diſtance of about ſix inches; and for the ſpace thus marked, take out a ſpit of earth nine inches deep on each ſide, ſlanting in ſuch a manner as to leave a ridge in the middle of the trench, the top of which ridge ſhould be about three inches below the ſurface of the border; then lay the woody part of the root upon this ridge, with the fibres divided on each ſide, according as their natural manner of growing will allow, and extended downward into the drills; this done, fill up the trenches with earth, treading it down gently until the ſtrong part of the root is covered about three inches thick; after that lay a covering of ſoot or aſhes upon the hill, as directed for other trees, this being all that is neceſſary at the time of planting, unleſs the earth is very dry, and then moderate watering will be proper.

Vines may be produced from cuttings of the laſt year's ſhoots, between twelve and eighteen inches long, with half an inch of old wood at the lower end: they muſt be ſet ſlanting in the ground, and only one bud or two left out; but there are ſtronger plants raiſed in one year from layers; but every perſon that plants vines has not an opportunity of doing it upon kinds wiſhed for, ſo muſt be content with cuttings.

Moſt ſorts will grow vigorouſly with us in England, but as they all come originally from a much hotter climate, the fruit of ſome kinds ſeldom ripens here without the aſſiſtance of artificial heat; though ſome other

Plate V

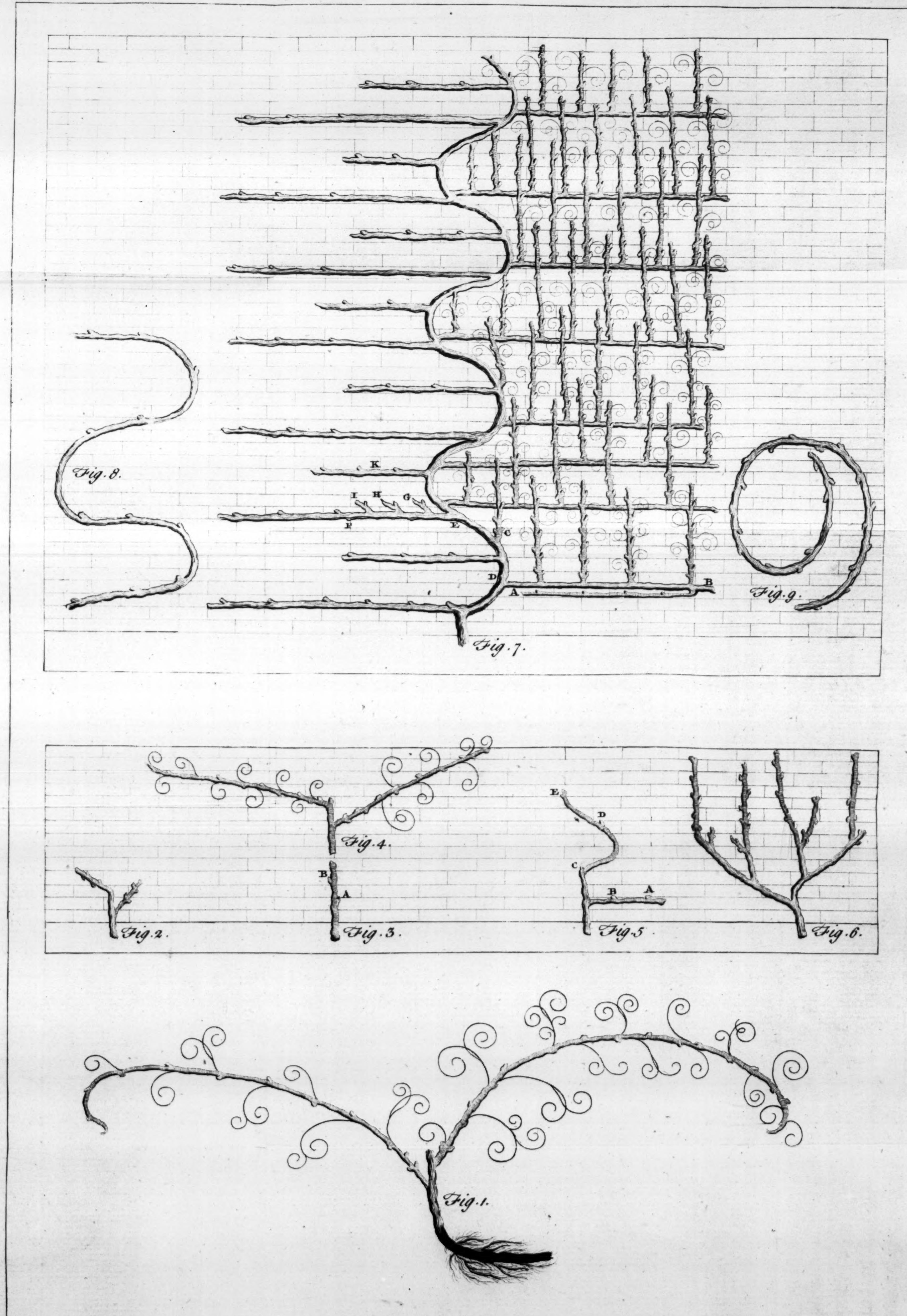


Fig. 7
A
B
C
D
E
F
G
H
I
K
Fig. 8
Fig. 9
Fig. 2
Fig. 3
Fig. 4
Fig. 5
Fig. 6
Fig. 1
12
6
1
2
3
4
5
6
7
8
9
10 Feet

other ſorts will bring their fruit to perfection upon ſtandards, with proper cutting only, others with cutting and nailing their branches to walls upon ſouth or ſouth-eaſt aſpects.

CHAP. LXII.

An Explanation of Plate V.

THE figures in this plate exhibit vines of different ages.

Fig. 1. repreſents a layer when firſt taken from the mother plant.

Fig. 2. the ſame when cut the cuſtomary way.

Fig. 3. when planted and cut according to the method I practiſe, having one branch taken off and the other ſhortened.

Fig. 4. is the ſame with two ſhoots raiſed from the two buds left on, when under the repreſentation of Fig. 3.

Fig. 5. repreſents the ſame vine cut and nailed in the winter.

Fig. 6. is a vine cut and nailed in the winter, by the common method.

Fig. 7. is one full-grown, with one of its ſides cut and nailed in the winter, and the other remaining as it was nailed in the ſummer.

Fig. 8. is a long branch ſuppoſed to be made laſt year, and turned in winter to cover a bare part of the wall.

Fig. 9. is called the ſowgelder's horn, and is a method made uſe of by ſome of the beſt pruners to diſpoſe of long branches.

CHAP. LXIII.

Of Pruning a Vine the firſt Year after Planting.

I have always obſerved that the beſt ſeaſon for pruning vines in winter, is, about the latter end of January, or beginning of February, when the weather is dry; though it is cuſtomary to cut them immediately after their leaves are fallen off.

But vines cut in October or November always make weaker ſhoots, than thoſe cut in January; for in the beginning of the winter, the wood, being ſoft and ſpungy, imbibes cold and watery particles at thoſe places where it is cut, and renders the next year's ſhoots weak.

Fig. 3. repreſents a vine with only two buds, as at A and B; though there were others lower, yet as two or three of the loweſt buds are generally ſmall and very near together, they produce only ſmall ſhoots, for which reaſon I think it is better to take them all off, and leave only two higher upon the branch, for they always put out longer ſhoots than thoſe below.

I always take one branch off the layer before it is planted; for if there are but two ſtrong ſhoots from a vine the firſt year after planting, it is ſufficient; and this may reaſonably be expected from the two buds left on at A and B.

Fig. 2. hath part of both branches left on, and all the buds they produced; but I think thoſe that are produced after this manner of ſhort cutting are generally weak, and too near one another.

CHAP.

CHAP. LXIV.

Of Pruning a Vine the ſecond Year after planting.

FIGURE the 4th repreſents a tree with two branches ſuppoſed to have been produced from the two buds at A and B in Fig. 3. but they ought to be nailed more upright in ſummer than they appear in the plate.

Fig. 5. is a repreſentation of the fourth, cut and nailed in winter after the method I practiſe, with no other buds left on but thoſe at A, B, C, D, E, tho' there were ſeveral others at the lower end of the ſtem which are taken off, and ſome likewiſe from the under ſide of the branch A and B.

Obſerve, theſe two buds at A and B are in ſuch places, as that the ſhoots proceeding from them may be nailed upright without being too near each other, and that at A may probably produce fruit, but thoſe buds proceeding from the lower end of a branch ſeldom produce prolific ſhoots; for which reaſon, I take them all off, except one on the upper ſide, as that at B, from which a branch may be expected that will be fit for a horizontal the next year. But the others would not only deprive thoſe at A and B of part of the juices collected by the roots, but alſo ſhade them from the benefit of the ſun; and if the buds had been left on the under ſide, there would not have been room to have nailed up the branches without ſhading thoſe above.

Thoſe buds at C and D are deſigned to produce ſhoots that will bear fruit; and the next winter, if long enough, they muſt be laid horizontally.

That at E is intended to lengthen the ſtem, and in winter muſt be turned in the manner repreſented by Fig. 7. but before branches are turned for ſtems or laid horizontally, it is proper to take notice of their length, and if they are leſs than four feet long, in any ſort of vines, they are too weak, and if there are no ſtronger branches to ſupply their places, they muſt be cut down to the firſt large bud at the lower end; and if all other buds are taken off, that left on will make ſuch a ſhoot as is wanted before the next winter.

By giving the ſtem ſuch curves, it will occaſion branches to break out of the old wood, from thoſe parts of the ſtem that are laid the moſt horizontally; and though they ſeldom produce fruit the firſt year, yet ſome of them ſhould be nailed up in the ſummer, if there be ſpace for them upon the wall, and may be laid horizontally in the winter, where vacancies require them.

But I don't chooſe to lay any young horizontals nearer each other than eighteen inches, and if thoſe branches deſigned for ſtems or horizontals have not been ſtopt in the ſummer, then one third part of their length muſt be taken off in the winter.

Theſe directions I think are ſufficient for the management of young vines; and what is to be done when they bear, I will treat of by and by.

CHAP. LXV.

Of Pruning a Fruit-bearing Vine the common Way.

FIG. 6. repreſents a vine cut and nail'd in the winter after the method generally practiſed, with all the nether and other uſeleſs buds left on; and though the buds at the upper end will produce fruit-bearing branches, yet they will be ſo near one another, that except part are taken off, both the fruit and young wood will be too much ſhaded: by this method of cutting and nailing, there will a neceſſity to take out more branches than there are to be nailed up at the firſt time of dreſſing in the ſummer; and if they are not taken out, the preſent fruit will be worſe, and the next year's branches will produce but little fruit.

CHAP. LXVI.

The Pruning of a Vine that is brought to bearing, and is in a regular Shape.

THE ordering of young vines having been ſufficiently treated of, I will now give directions for managing them when they are brought to bear.

The ſide A in Fig. 7. repreſents the branches nailed up in the ſummer, as when the fruit is upon them; the other ſide ſhews how the vine muſt be cut and nailed in the winter, with no buds upon the branches, but in places where ſhoots are required; and when the branches have been kept in proper order the ſummer before, then either all, or moſt of the buds left on, will produce bearing branches; for all thoſe neareſt the ſtem, and on the under ſides of the branches are taken off with the point of a ſharp knife, when the branches were nail'd up in the winter, for then it is known what diſtance the next year's ſhoots ought to be from one another; and I leave buds in no other places but where ſhoots are deſired, but there ſhould never be too many left on.

I have no other reaſon for taking the buds from the under ſide, but to leſſen the number of enſuing branches, for they would all produce bearers, except two or three neareſt the ſtem B.

In the month of May, nail the branches to the wall as upright as poſſible, for they will be leſs ſubject to put out collaterals, which rob the fruit, than when they are nailed either horizontally or reclining.

It is a common practice to nip off the tops of branches at the firſt time of ſummer nailing; but this I think wrong, for it has the very ſame bad effect as improper nailing: but at the ſame time, all ſhoots breaking out of the old wood muſt be taken off, except thoſe growing at ſuch places where they are wanted for new horizontals the next year.

The young branches muſt be often nail'd up in the ſummer, to prevent the wind from breaking them; and when they are grown ſo high as to ſhade the fruit on the branches next above, or when they are in bloſſom, then nip off their tops at the ſecond joint above the fruit; but ſuch as are deſigned for new horizontals ſhould be nailed at the greateſt height they will allow, without ſhading either one another, or any branches that have fruit upon them.

Thoſe branches that are ſtopt in their growth by ſhortning, will put out collaterals at almoſt every bud; ſuch ſhoots muſt be nipt off, one joint above the place they proceed from, before they ſhade the fruit too much; this work ſhould be often repeated in the ſummer, but never break off a leaf from any growing branch.

Always obſerve to provide branches for new horizontals where wanted, for the old ones ſhould not remain longer than two years; but it would be better to have freſh horizontals every year, for the leſs length of old veſſels the ſap paſſes through, the larger the bunches of fruit will be.

The loweſt branch on the ſide D, was a ſhoot made the laſt year, having all the buds taken off from the under ſide, but has all left on the upper one, all of which I expect will produce bearing branches, except that neareſt the ſtem, which if it ſhoots ſtrongly, muſt be preſerved of a length ſufficient to make a horizontal the next winter.

The ſhort branch above D, was obtained from the ſtem the laſt ſummer, as alſo that at C, on the other ſide; and as there was not an opportunity to lay in a new horizontal of a ſufficient length at E, I therefore left this ſhoot above D, to produce bearers, in order to cover the naked part at E, F, where the branches that bore the laſt year are taken off from the horizontals; but the other end has buds upon it, and was one of the bearing ſhoots the laſt ſummer; all the parts above are cut and nailed by the ſame rules, as ought alſo the ſide A to be.

But if it happens, that there is not a ſhoot of a proper length near the ſtem, to be laid for a new horizontal, as that is above D; then, inſtead of taking the branches quite away that bore the laſt year upon E and F, they ought only to be ſhorten'd, about two inches above the firſt large bud at their lower end; after that, nail them leaning as much as they will bear without breaking; and all the ſmall buds below muſt be taken off with a knife point, leaving upon each ſhoot one bud only, as at G, H, I; when this is done there is no need of one at K.

Sometimes it happens that many of the ſhoots which bore in the ſummer are weak at the time of winter-pruning, and perhaps but one ſtrong one at the end of a horizontal; when that is the caſe, I turn it quite back to the ſtem, or as near as it will reach, as that near B is ſuppoſed to be turned below the horizontal to A; and then the two middle branches ſhould be cut off cloſe, but that next the ſtem ſhould be cut like that at G, with one bud on, to make a ſhoot for a new horizontal the next year.

Though the branch from B to A is laid below the old horizontal, yet it is not always required to be ſo, for it would grow as well had it been above, but I always contrive to lay the new horizontals at about half a yard from each other, and if they be cloſe to an old one, it is not the worſe.

I am apprehenſive many practitioners will be much againſt laying in a branch four feet long of one year's growth; imagining, that will too much weaken the root, which is the common objection againſt the practice.

But I hope reaſon and experience will convince them of the contrary; the leaſt obſervation will ſhew, that there are fewer buds upon thoſe long branches againſt one yard of wall, than in the ſame ſpace where vines are ordered according to Fig. 6. nor can ſo many branches proceed from them; for which reaſon thoſe ſhoots which are produced muſt be ſtronger than if the number was greater, and without receiving any more juices from the root than thoſe that are cut ſhort; by which it is plain, that long branches are no cauſe of weakneſs to the roots.

CHAP. LXVII.

Of Walls and the Space proper for Vines.

THough the full-grown vine covers ſuch a large ſpace, yet I think it is more than a vine ought to have, in order to produce good fruit; for vines are much ſtronger when they are not ſuffered to grow above four feet high, planted from one another at the diſtance of eight feet; for then new horizontals may be laid almoſt every year, which will produce better fruit than thoſe that are older.

Likewiſe the heat reflected from the earth makes a great addition to the fruit; for theſe reaſons I chuſe to place vines in the middle of the ſpaces between peaches and nectarines, in order to fill up the vacancies, otherwiſe part of the wall would be naked at the bottom, as appears in Plate IV. Fig. 6.

CHAP. LXVIII.

Of the Pruning and Nailing a Vine-branch that is eight or ten feet long.

FIG. 8. is a long ſhoot turned to fill a narrow piece of walling; it has many buds taken off, and only ſuch remaining upon it as are likely to produce bearing branches, at diſtances from one another proper for them to be nailed; by this means I have cauſed one branch to produce as many bearers as have the next ſummer born above twenty bunches of grapes, as large as any others, either on the ſame vine, or any of the ſame kind.

Fig. 9. is a ſhape which ſome people turn long branches into without diſbudding, and I have ſeen them bear much fruit, but the ſhoots are at very improper diſtances from one another, till part are taken off; and if the buds producing them had been diſplaced at the winter pruning, it would have prevented the juices from being waſtfully ſpent in forming ſuperfluous ſhoots, whereby the others would conſequently have been ſtronger.

CHAP. LXIX.

General Rules for Pruning a Vine.

I Will here add two or three general rules to be obſerved in pruning and nailing.

When the end of a branch is cut in winter, it ſhould not be done too near the bud next below, but about two inches above.

Whenever a branch is taken off, it ſhould be cut cloſe to the part it proceeds from, and not left with a ſhort ſtump, for theſe only put out young uſeleſs branches, which rob others; yet, notwithſtanding, this method is much practiſed.

Lay none of the young branches horizontally in ſummer, nor upright in winter.

Sometimes a vine in April, or the beginning of May, will diſcharge, at places where they have been cut, a large quantity of juice, which is called bleeding, and very much weakens the bearing branches that grow above thoſe wounded parts, except the running be ſoon ſtopt; which may be done by wiping the part very dry with a cloth, and immediately after lay on ſome dry ſoot, wood aſhes, or unſlaked lime; and if the bleeding continues, then the ſoot or other ingredients muſt be applied every day.

CHAP. LXX.

Of the Pruning of an old Vine that hath been ill cut before.

MANY old vines are in various unmeaning ſhapes, with large bunches of ſmall ſhoots like beſoms; but they are more capable of being altered in a few years than any other tree, becauſe they make ſuch extenſive ſhoots in one ſummer, as will ſoon form a new and regular tree, if rightly managed; but before this work is begun, it is proper to conſider what compaſs of wall each plant has to cover; and if is not greater than what is repreſented by Fig. 7. the tree may be brought to the ſhape deſired.

If the firſt attempt is made in ſummer, nail up all young branches to their full length, that are in proper places, either to make a new ſtem, or horizontals of the next year; and all others, that are without fruit, or ſuch as ſhade the former, muſt be cut off: but if in winter, the tree muſt be cut in ſuch a manner, as that by taking off old branches, many young ſhoots may be produced in the middle part from bottom to top, which muſt in the ſummer after be nailed up, as directed for thoſe on young trees.

The winter following, take the ſtrongeſt of thoſe ſhoots at the bottom of the tree, and diſbud and nail it for a ſtem, and if it does croſs ſome old branches for one year, there will be no harm; all other young branches muſt be treated in the ſame manner as directed in Fig. 7. and all ſtumps muſt be taken away from the old branches, that would put out leaves too near the young ones.

But whilſt theſe new branches are preparing in the middle of the tree, care ſhould be taken to produce fruit upon the extremities of the old ones, but they muſt be cut quite away as the new branches become capable of covering the wall.

When vines cover a greater ſpace than repreſented by Fig. 7. they require different management, according to their height and diſtance from one another. Such as are low may have branches laid to make roots about eight feet aſunder, in order to carry up ſtems from thence to the top; but ſome vines are cauſed to cover a great quantity of wall, and have no young branches within eight or ten feet of the ground; in ſuch caſes, there is no opportunity to make new roots; then new ſtems muſt be carried up from the loweſt horizontals at the diſtance of ſix feet from each other, and ordered like thoſe raiſed from the ground.

CHAP. LXXI.

Of Thinning of Grapes.

IT is as proper to thin grapes when there is too great a quantity as any other fruit; which may be done either by taking off the bunches only, or the branches with the fruit upon them: as ſoon as the bloſſoms are ſhed, it may eaſily be diſcovered which are likely to make the handſomeſt and largeſt bunches; and when there are two bunches upon one ſhoot, the worſt ſhould be always taken off, provided the grapes are of a large ſort, ſuch as the St. Peters, Lombardy, Tokay grape, &c. and when this way of thinning is not ſufficient, then ſome of the branches muſt be cut away according as there is a neceſſity.

But the ſmaller, or midling ſized bunches of grapes muſt always be thinned, by taking off branches where they are too near one another; for two bunches upon one ſtrong branch will be as well taſted as if there was but one.

There are many kinds of grapes mentioned in the catalogue, which require more than natural heat to ripen them; but they are pruned like others. I ſhall treat of thoſe that will bear upon ſtandards in another place.

CHAP. LXXII.

How to preſerve the Bloſſom of Grapes, from being injured by Froſt and too much Wet.

FROSTS in May or June ſpoil many bunches of grapes, and is the chief reaſon why ſome berries are ſo much ſmaller than others on the ſame bunch, as may generally be ſeen in the ſweet water kinds, for they bloſſom the earlieſt, and conſequently ſuffer moſt from the froſts.

As the weather is generally dry in ſummer, when the nights are froſty, I have found moderate watering very ſerviceable, and that there have been better bunches upon thoſe vines which were watered than upon others that were not, tho' of the ſame kinds and againſt the ſame wall.

Take urine or brine that is equally impregnated with ſalts, and mix therewith the ſame quantity of water, and pour upon the roots of a large vine two quarts every other night, and ſo in proportion for thoſe that are younger and of a leſs ſize; this muſt be done on the top of the border as near the ſtem as poſſible, without touching it; and will be of great ſervice any time in ſummer, when the earth is dry, but in wet ſeaſons lay upon the borders once in a month, either lime, aſhes, or ſoot, as directed in the ſpring after cutting.

I have alſo known cold rains to be prejudicial to the bloſſoms of grapes, and to guard againſt it and alſo froſts, I have put the bunches of bloſſoms at their firſt appearance into bags of crape, which I have found of great ſervice, for I have had much better bunches in them than the others upon the ſame vine: beſides they were earlier ripe, and not damaged by flies.

CHAP. LXXIII.

Of forcing Grapes by Artificial heat.

IN all parts of England, grapes may be improved by ſtove walls, either with or without coverings of glaſs, and in the north parts of the kingdom there ought to be ſuch conveniencies in all large gardens, for in wet ſeaſons very few grapes will ripen without them, neither will ſome of the moſt valuable kinds which I have mentioned in the catalogue, ever ripen in the moſt favourable ſeaſon by the natural heat of the ſun alone. Walls for that purpoſe are built after different methods, and ſometimes vines are planted by the ſide of a ſtove or green-houſe, built for the preſervation of exoticks, and the branches drawn into it through ſmall holes left for that purpoſe; and tied or nailed to bars of wood near the glaſſes.

Thoſe ſhoots bear well the firſt year they are taken in, tho' but very little afterwards; therefore new ones of a ſufficient length ſhould be annually provided on the outſide, and the old branches cut off.

Tho' grapes ripen earlier, by this method than any other I know of, yet the fruit is never ſo well flavoured as thoſe which have the benefit of the dews.

Some walls are built about ten or twelve feet high, with funnels thro' which the heat is conveyed to all parts, from fires made on the north ſide; and have on the ſouth ſide glaſſes, which reach from the top to the out-ſide of a border eight or ten feet broad.

Theſe borders are very ſerviceable to raiſe early crops of kitchen vegetables upon, but vines or other fruit-trees, generally become weak, if they are forc'd two years together.

There have been ſeveral other ſorts of walls made uſe of for this purpoſe; ſome with their fronts like one ſide of a houſe-roof, upon which the rays of the ſun dart leſs oblique, than upon walls that ſtand perpendicular to the horizon; but theſe bevel fronts are attended with a great diſadvantage, for the wet lodges upon and decays the fruit.

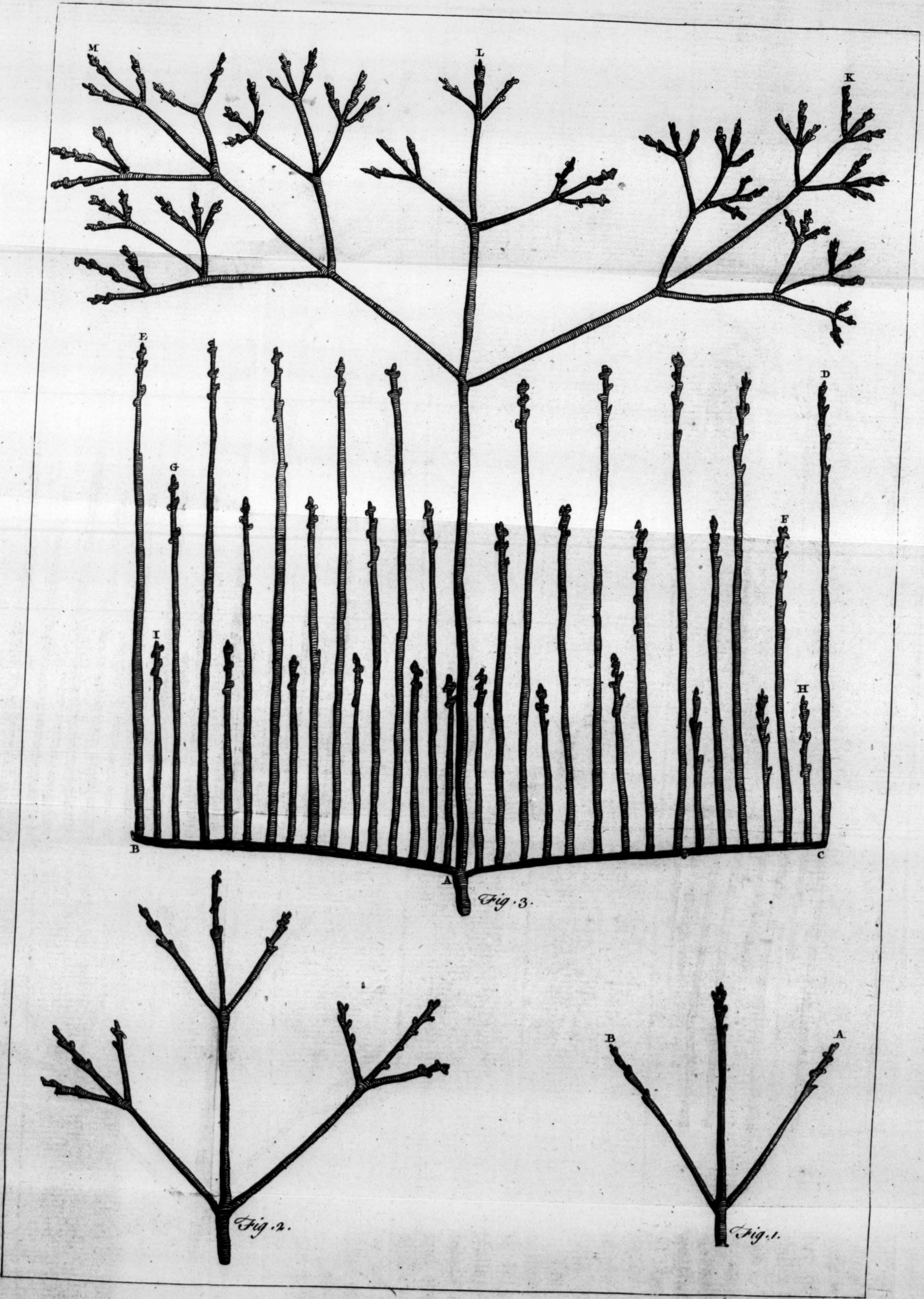
The beſt flavoured grapes, and the largeſt, that ever I taſted, were produced from vines planted againſt a wall about four feet and a half high, without any covering in front; tho' not ſo early ripe as thoſe within ſtoves; and this is the only ſort of wall I ſhould chooſe, provided glaſſes could be placed againſt it at pleaſure; which ſhould be done when the nights are froſty, and either taken off or opened more or leſs every day when the weather is fine.

There ought to be a few bars of wood nailed upon the wall, about an inch thick, to prevent either the fruit or the branches from being injured by too much heat.

The borders ſhould be of the ſame ſoil as thoſe for other fruit-trees, and not ſuch as is preſcribed for vines againſt other walls; but theſe ſhould be watered with the ſame mixtures, and as often as the others, and muſt in ſummer be watered every night over and above with water alone, except when the ſurface of the border is made wet with rain.

I need not give any directions for building walls for the purpoſes before mentioned,

Plate VI.



T. Jefferys sculp

there being many plans of that ſort already extant.

CHAP. LXXIV.

The explanation of Plate VI. and pruning of a Fig-Tree againſt a wall.

THIS plate ſhews the ſhapes of a fig-tree of different ages: Fig. 1. is either a tree juſt planted, with three branches left on, or one that has been planted a year, with three buds, or more upon it, which has produced ſhoots.

Fig. 2. is a tree a year older than the firſt, brought to the ſhape it appears in, by diſplacing all other buds but thoſe which produced the ſhoots.

Fig. 3. is a tree almoſt full grown, tho' it had the ſame ſhapes as the other two figs when it was young, and the horizontal parts A B and A C, were like A and B in Fig. 1. but had they been laid horizontally when ſo ſhort, they would not have reached near enough the out ſides of the ſpace deſigned for the whole tree; and as they would increaſe but ſlowly in length after, part of the wall would have continued a long time bare.

As the roots of a fig-tree are like thoſe of vines, ſo muſt they be planted the ſame way, tho' pruned differently.

If the young ſhoots of a fig-tree are not too near each other they will produce almoſt as much fruit as leaves, both from the ſame places, but not all of them at the ſame time; for the leaves drop off the trees when the fruit near the upper ends of the branches are only like ſmall buds; and there are many others appear the next ſpring from places where leaves were ſhed from in the autumn, that is, at the extremity of thoſe ſhoots that were not killed by the winter's froſts,

Theſe ſmall ones and thoſe that only appear in the ſpring, are the moſt certain to ripen, for thoſe which are pretty large in the autumn are liable to be killed in the winter; but if any of them live they ripen the earlieſt the following ſummer, and are the beſt fruit.

Thoſe which appear the largeſt at the time of the trees ſhedding their leaves, were ſuch as put out earlieſt upon the new made ſhoots; but few of which ripen in this nation the firſt year, except ſome particular kinds, as the catalogue mentions, tho' I don't doubt but there are many which do in more ſouthern climates, as in Barbary, Spain, and Italy, where I am informed they are in great perfection.

I can't think it proper to take off the live end of a branch in the ſpring; for that part is moſt certain to produce ripe fruit; neither do I approve the ending of young ſhoots in June, tho' it is practiſed by ſome people, to procure a great number of branches, but they may be obtained by laying ſtrong ones horizontally, and if they are old make nicks on their upper ſides, which will cauſe young ones to come through the rind. The ſpring, or what may be called winter-pruning, I think the propereſt time for taking out large branches, which I generally do about the middle of March, when the weather is dry. Then ſhould all dead fruit be pulled off, and the young ſhoots that are left ſhould be choſen with live ends, if poſſible; if not, the dead ends muſt be taken off, and the branches nailed up at leaſt the breadth of a full-grown leaf from each other.

As in the ſummer-time there will be more branches put out than can be placed at the diſtance from each other required, let them be taken off at their firſt appearance, and the others kept cloſe to the wall in the ſummer, by nailing them as they advance in length. This method will prevent their being injured by the winds, as they are ſubject to be, by reaſon of their large leaves.

If at any time there be more branches put out from the horizontals than can be nailed upright, at proper diſtances from each other, let them be taken off at their firſt appearance.

As the upright branches advance in height, take all from the middle branches that would intercept them before they reach the top of the wall, and ſuffer no collaterals to remain upon them (at winter-pruning) above two inches long.

The wood of one year old, in the uprights, produce no leaves which gives room for an annual ſucceſſion of branches, admit there be no long collaterals left on.

I know there are many practitioners that only nail the ſtrongeſt parts of a tree, and leave the collateral branches looſe, tho' of a great length, and have many times plenty of fruit upon them.

But they never ripen ſo early as thoſe that are near the wall; and if they do at all, it is only ſuch as would ripen on dwarfs or eſpaliers; and I think it wrong to beſtow a wall upon ſuch trees as would produce as much good fruit without it.

The catalogue ſhews the moſt tender ſorts, and thoſe ought to be guarded with matts, ſo ſoon as the hard froſts begin, and continue covered till March.

CHAP. LXXV.

Concerning Eſpaliers of Fruit-trees, and the Manner of making them.

THere are many kinds of fruit-trees whoſe branches are naturally inclined to hang downward, and by croſſing and galling one another, often become very cankered; likewiſe when they grow too near together, many of the branches being deprived of the benefit of the ſun, do not produce much fruit, and that very ſmall and ill taſted, and alſo ſubject to be beaten down by the winds.

But when the branches of good kinds are artfully ſupported, they will produce fruit both large and of a pleaſant taſte, without the help of a wall, provided no extraordinary heat is required. The method generally uſed for this purpoſe, is to bring them to the form of a hedge, whereby they are not only ſerviceable in defending the quarters of a kitchen-garden from ſevere winds, but alſo prevents them from being ſeen by perſons in the walks, which are extremely pleaſant, when the fruit-trees are in bloſſom. They may be ſupported in different manners, as every one thinks proper; ſome uſe only common hedge-ſtakes, as being the leaſt expenſive; but theſe are of ſuch ſhort duration, and want ſo often renewing, that they become more chargeable in the end than the following method, which is much better for the trees.

In the firſt place, poſts of oak or elm, about ſix inches ſquare, and thirty long, covered with pitch, muſt be ſet in the ground about twenty inches deep; and to the top of every one of theſe poſts there muſt be a ſtandard of oak or fir fixed; if of oak, about three inches ſquare will be ſtrong enough, and the ſame height you intend your eſpaliers to be, which ſhould not be more than ſeven feet; for when they are higher they are frequently damaged by the winds; but if they be of fir, they ought to be four inches ſquare at leaſt: then betwixt every one of theſe ſtandards there muſt be two rails of about three inches ſquare, mortiſed to the ſtandards, one about two feet above ground, and the other about a foot below the tops of the ſtandards; after this, ſtraight rods of haſle, or young aſh-trees, or any other ſort of light wood, muſt be fixed to the rails, about nine inches aſunder (on the ſame ſides as the trees are to be planted) in an upright poſition from the ground, and as high as the tops of the poſts and the whole frame is painted; it will laſt much longer, and be leſs ſubject to caterpillars.

'Tis cuſtomary to tie or nail the trees to ſtakes, for two or three years after planting, before a frame is ſet down, but it is much better to ſet down the frames ſooner, for when trees are arrived to this age, holes for the poſts can't be made without deſtroying ſome of their roots.

There muſt be twice as many poſts as trees, and placed at equal diſtances from each other, in ſuch a manner, as that a tree may ſtand in the middle of every other ſpace. I have already given directions how to make borders for eſpaliers; and the methods for cutting their roots and planting them are the ſame as for wall-trees; but eſpaliers don't require more than three fourths of the ſpace allow'd for others, becauſe they have the advantage of putting out bearers on both ſides, which wall-trees have not.

CHAP.

CHAP. LXXVI.

How Pears planted in Eſpaliers are to be pruned.

I Have before given directions for improving of old pear-trees, &c. againſt a wall, which I hope will inform any one how old eſpaliers and dwarfs are to be ordered, ſo ſhall only ſpeak of young ones.

Pears upon quince-ſtocks are the beſt for eſpaliers, but they ſhould be pruned in a manner ſomewhat different from wall-trees, becauſe they are planted at different diſtances, for they muſt be trained up with two ſtems like a peach; but the horizontals ſhould not be diſtant from each other above three fourths of the ſpace allowed for wall-trees; all other ways of management are the ſame for both.

But one thing more is requiſite to be obſerved in regard to the horizontals of ſuch trees as grow vigorouſly; and that is, if they ſhoot to a greater length before they bear than half the diſtance between their ſtems, then they muſt be reduced to one ſtem, like thoſe planted againſt walls. Inſtead of nailing them in ſummer to the frame, whilſt the branches are tender, they may be tied with ſtrings of garden-mats; but in winter, the Dutch oſier is better for this purpoſe. The trees ought to be let looſe from the frame early in the winter, that they may have the benefit of the rains and ſnows before pruning.

CHAP. LXXVII.

How Apples in Eſpaliers are to be pruned.

APPLES deſign'd for eſpaliers ſhould not be propagated on crab-ſtocks; but either upon paradiſe, creepers, or codlin-ſtocks.

A regular cutting of apple-trees makes great improvement in the fruit, both as to ſize and taſte; eſpecially, the choiceſt ſorts of table-fruit, which, I think, ought to be planted in gardens only, and not in open orchards; and, it is for that reaſon I have included ſo many of them in my plan of a kitchen-garden.

The way of planting apples in eſpaliers, and the manner of ordering them are the ſame as for pears upon quince-ſtocks.

CHAP. LXXVIII.

Of Mulberries and Filberds, and how to prune them in eſpaliers.

THE mulberry produces much better fruit, when planted in eſpaliers, than from tall ſtandard-trees, and not liable to be ſhaken off by the winds.

They ſhould be planted at the ſame diſtance from one another as preſcribed for pears upon quince-ſtocks, but pruned in a different manner.

For, in the firſt place, they ſhould be trained up with one ſtem, leaving horizontals upon it half a yard aſunder; becauſe the branches proceeding from a ſtrong ſhoot or horizontal, will not bear the firſt year; for the fruit is moſt commonly produced from ſhoots proceeding from buds near the ends of thoſe branches, which grow from horizontals the year before; and, as neither the buds of ſtrong branches, nor the buds at the lower end of a branch produce ſhoots that will bear, it is, therefore, intirely wrong to ſhorten the collateral branches; and ſhould the horizontals be nearer together than the ſpace before directed, the bearing branches would too much ſhade one another.

When the bearers are come to the length of half a yard, they muſt be ſhortened; and, as many ſmall branches will put out from them, ſome of thoſe neareſt the horizontals may be left on; and, likewiſe, young ſhoots growing from the ſtem ſhould be encouraged and trained up for new horizontals, in the ſame manner as directed for pears.

Filberds and large nuts muſt be ordered the ſame way as mulberries, with this difference only, that they don't require above half the room.

CHAP. LXXIX.

Of the Ordering of Quinces and Figs in Eſpaliers.

THE quince is alſo ſometimes planted in eſpaliers, and requires the ſame management in regard to cutting as the mulberry, but there is no occaſion for its horizontals to be more than a foot aſunder, and it ſhould have two ſtems, becauſe it produces but ſhort horizontals.

Some ſorts of figs will do very well in eſpaliers, where the ſoil is dry.

Their branches ſhould be confined to the frame, at the ſame diſtance from each other, as directed for thoſe planted againſt walls, and ſhould likewiſe be placed in the ſame poſition.

CHAP. LXXX.

Of Pruning of Cherry-trees and Plum-trees in Eſpaliers.

CHerries and plums muſt be ordered in the ſame manner as pears upon quince-ſtocks, only obſerving to renew the horizontals before they are too old; for theſe kinds of trees bear the beſt fruit, and the greateſt quantity upon young ſtuds; I don't mean to have the old branches taken out, ſo as to leave part of the ſupport bare, but to preſerve young ſhoots from the ſtem, or near it, and lay them between the old horizontals, whoſe ſtuds muſt be taken off when too crouded to give air to the new ones.

The branches of ſtone fruit-trees are ſubject to gum, if they are ſtrained or bruiſed; ſo that all poſſible care ſhould be taken in tying, leſt they ſhould be galled by the ſtrings.

CHAP. LXXXI.

Of the Ordering of Apricots and Almonds in Eſpaliers.

THERE are ſeveral ſorts of apricots that will bear well in eſpaliers, without the trouble of tying their bearers; but they muſt be trained up with two ſtems, and their horizontals laid about a foot aſunder, and tied to the frame.

The bearers muſt be left at the ſame diſtance preſcribed for thoſe againſt walls, and the horizontals renewed in the ſame manner.

The ſweet almond will likewiſe bear very well in eſpaliers, managed only in the ſame manner as the apricot, and both ſhould be trained up in the ſhapes repreſented in Plate IV.

CHAP. LXXXII.

Of the Ordering of Grapes in Eſpaliers.

THERE are ſeveral ſorts of grapes that will do very well in eſpaliers; but they muſt have a frame lower than what is mentioned for other fruit-trees; for, the nearer the ground the earlier they will be ripe.

The poſts of the frame need not be more than two inches ſquare, made of oak, about a yard long, with a ſharp point driven a foot into the ground, at the diſtance of two yards from each other in a ſtrait line; and then along the tops of theſe poſts, there muſt be a little pole or pantile-lath nailed; another nine inches below, and likewiſe one about three inches from the ground.

As theſe eſpaliers are very low, they had much better be within a quarter of the kitchen-garden, than upon the boundary. The vines ſhould be planted about eight feet aſunder, after the ground is prepared as directed for thoſe againſt walls; and where

Plate VII

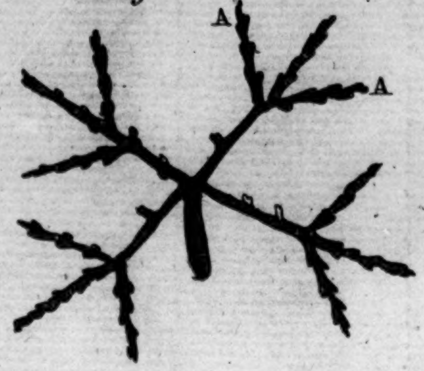


Fig. 6.

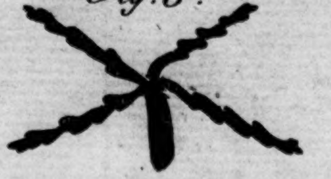


Fig. 5.

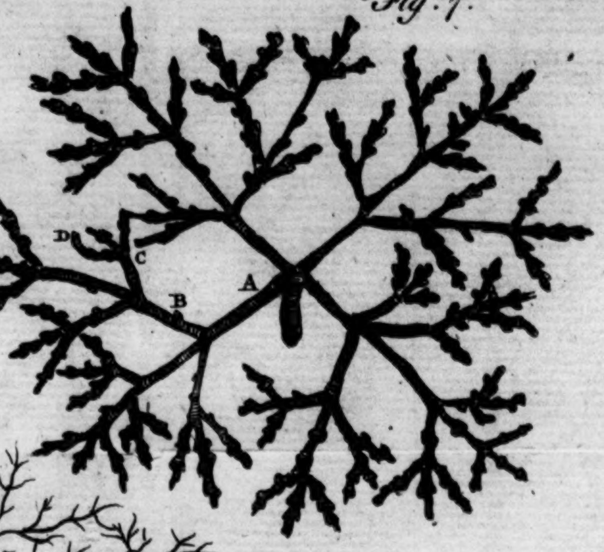


Fig. 7.

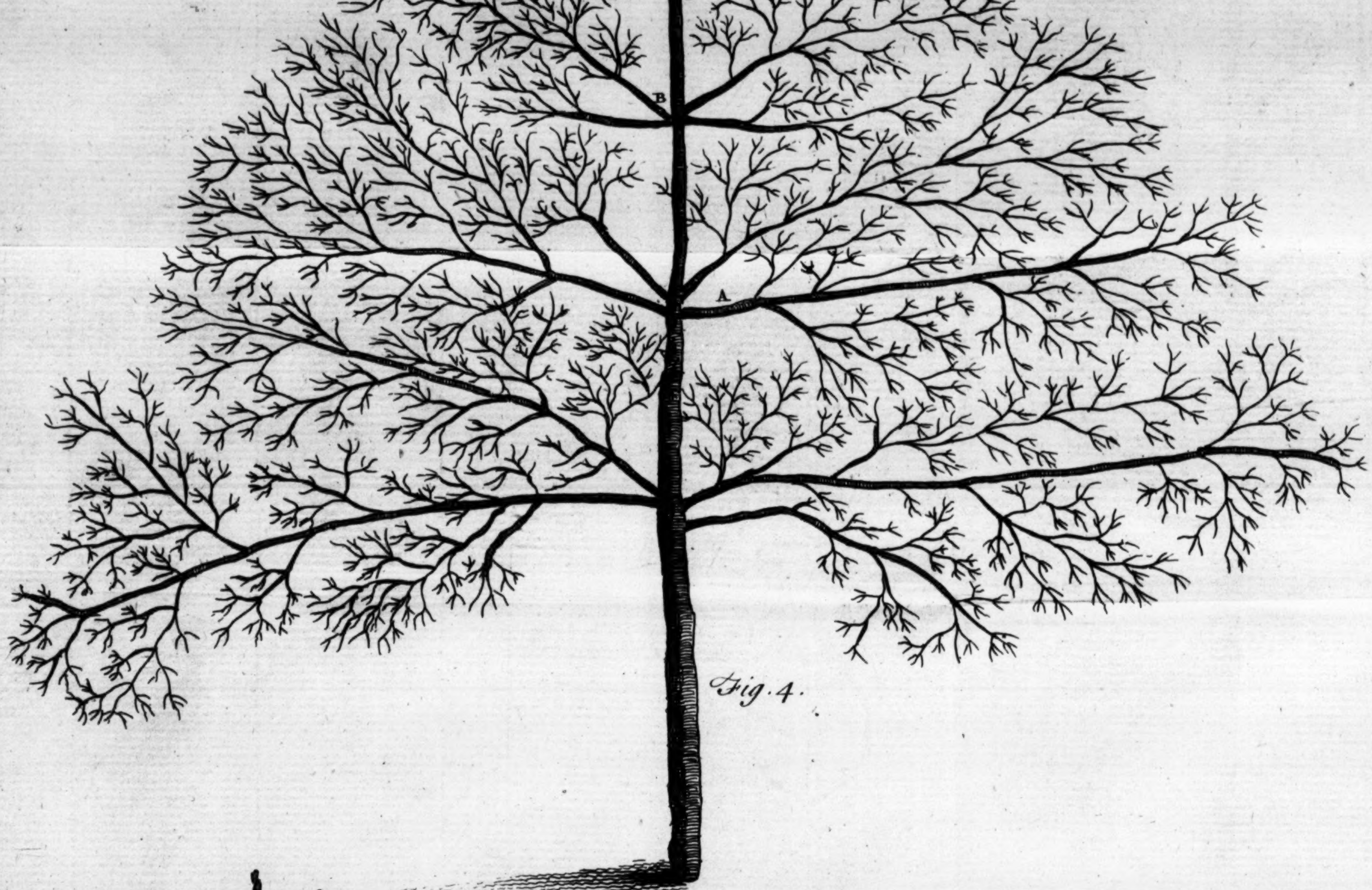


Fig. 4.

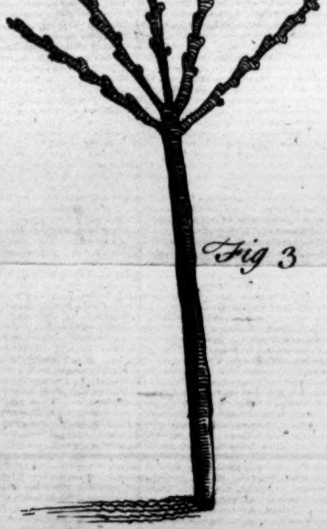


Fig 3

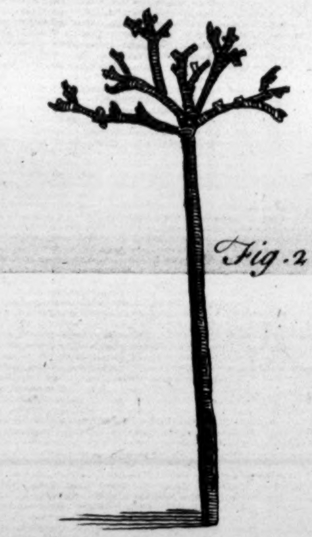


Fig. 2.

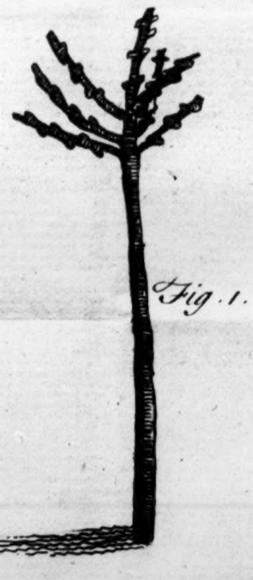


Fig. 1.

T. Jefferys sculp.

where it is intended to have more than one row of theſe eſpaliers, they muſt be ſet from one another the diſtance of three feet.

They ſhould be cut exactly in the ſame manner as vines planted againſt walls, with two courſes of horizontals, one tied to the lower bar, and the other to the middle one; the bearers of the lower horizontals may be tied to the horizontal above, and the bearers of this to the upper bar, and ordered in ſummer as thoſe againſt walls. The ground ſhould be kept clear of weeds, and a little lime or coal-aſhes dug in every year after the trees are cut.

CHAP. LXXXIII.

Of Pruning, &c. concave Dwarf-trees.

THE 5th, 6th, and 7th figures in the VIIth Plate, repreſent a dwarf-tree of different ages, either concave or horizontal. Concaves are much the propereſt for borders, becauſe they don't cover ſo much ground as horizontals, ſuppoſe the branches of both to be of equal length.

A tree deſigned for a dwarf ſhould, when taken from the nurſery, have four branches or more, no leſs than two feet long, growing from the ſtem, betwixt twelve and eighteen inches from the ground, as thoſe in Fig. 5. but it is better to have ſix or eight branches, that ſome may be taken off in proportion to the loſs of roots: but if there are not four, then the ſtrongeſt muſt be cut to about four inches long, either at the time of planting or ſoon after, to increaſe their number, with only as many buds left on it at the upper end as there are ſhoots required. Their roots muſt be cut like thoſe of wall-trees, and planted at ſixteen or eighteen feet apart, and the ſtem muſt be placed erect. But obſerve, that all branches that are more than two feet long at the time of planting muſt be cut to make their number increaſe, for at that diſtance from the ſtem more branches are required.

When any of the ſhoots are two feet long, they muſt be inclined about forty-five degrees, either by nailing or tying to ſtakes fixt in the border.

The branches muſt be kept at equal diſtances from one another, at the upper ends; and, if any of them do not put out two or three others at the diſtance of two feet from the ſtem, then their extremities muſt be taken off to that length, and all the lower buds, leaving only ſuch a number remaining as there are branches deſired; but if there be proper ſhoots, then let all the nether buds or branches remain till the next winter, and if the new ſhoots A A, &c. in Fig. 6. are two feet long or thereabouts, all others that don't exceed a foot in length may be left for bearers, and thoſe that are more muſt be cut out. If any of the new-made branches that are at the extremities of others, are not much more than a foot long at the time of winter-pruning, inſtead of leaving three, as in Fig. 6. leave only two of the longeſt ſhoots, and ſuch as exceed two feet muſt be cut to that length; or, if there are three others nearly of that length, let that which is too long be cut out.

Theſe new branches muſt all be confin'd at equal diſtances from each other; and the beſt way of doing it, is to make a ſort of hoop or circle of ſmall aſh or haſle, ſomewhat ſmaller than hop-poles, which muſt be ſupported by three or four ſtakes, at ſuch a height, that the branches may be tied to the hoop within ſix inches of the upper end, in the ſame riſing poſition they were firſt confined.

After this is done, the tree will nearly repreſent Fig. 6. and muſt by the ſame method be brought to the ſhape of Fig. 7. till the firſt made branches are about eight feet long, and ſuch as extend further muſt be taken quite out cloſe to the part they proceed from and not ſhortened.

I have ſeen theſe ſort of dwarfs greatly abuſed, by too much ſhortening or ſtumping; eſpecially at firſt, before they begin to ſhoot ſtrongly, and then they cut them again becauſe they are too vigorous; by which means, a tree is much longer before it bears, than it would otherwiſe be.

Branches of dwarf-trees ſhould never be ſhortened, but where ſhoots are wanting, or to take out a canker'd part; and ſuch as are grown ſo long as to croſs, or touch others, muſt be taken out in the winter, and the neareſt ſhoot that is ſuitable confined to its place.

Branches often put out in the ſummer from the lower parts of the tree, which ſhould be obſerved, and either taken away or left on, as occaſion requires.

When trees produce vigorous ſhoots at their extremities, then the branches below may be left on till winter, and then take them off, provided the tree is furniſhed with bloſſom buds; but if it is not, let that ſhoot which grows the moſt upright and neareſt the ſtem, remain to receive part of the ſap, and that will check the vigour of the others.

When a tree ſhoots but little at the extremities, and is full of fruit, then all the lower branches that can conveniently be ſpared muſt be taken off early in the ſummer: if it has but little fruit, it is a ſign that the tree wants relieving with new branches.

When this is the caſe, there muſt be as many ſhoots left in ſummer as can be conveniently laid to the frame of wood in the winter, without deſtroying the old branches which have buds for bloſſoms, till the new branches can be brought to bear; and the old ſtuds or bearers muſt be taken away, as new ones are produced to ſupply their places: and theſe new branches ſhould be treated in all reſpects like a young tree, and not ſuffered to touch one another.

When a tree is become ſo weak that it makes few or no ſhoots, after it is arrived at its full ſize, then it wants new branches, and the way to recover them is to cut off a great many of the ſtuds in the winter cloſe to the bottom, and eſpecially thoſe neareſt the ſtem; which generally cauſes ſhoots to put out at the places from whence the others were cut: but if this is not ſufficient, take a chiſel the next winter, and cut into ſeveral of the ſtrongeſt parts about one third of their thickneſs, but theſe cuts muſt be made on the upper ſide of the branch, and a piece taken quite out, equal in length and depth; this is a ſure way to produce young ſhoots, provided the root be healthy.

When a dwarf is cut in the winter, all the moſs and old bark ſhould be clean rubbed off; and the cankered parts cut away to the quick: this ſort of management is very proper for either the pear upon the quince, the apple upon the paradiſe,

diſe, or the plum and cherry upon their own.

CHAP. LXXXIV.

Of Pruning Horizontal Dwarf Trees.

THE number of branches proper for horizontals muſt be the ſame as the laſt, and all the ſtems of the ſame length; but as their branches are laid horizontally, they extend much farther than a border of common breadth can contain, and are therefore better upon quarters, which muſt be prepared for them as directed for borders.

Their roots are cut in the ſame manner as other dwarfs; ſo is the manner of planting, though at a greater diſtance, for thoſe that are the leaſt vigorous ſhould not be leſs than twenty feet aſunder.

The only difference in their management is in the poſition of their branches, the one being faſtened to ſtakes and hoops in an aſcending manner; and the other laid quite flat (but I adviſe they ſhould be four feet long, before they are brought quite ſo low) about half a yard from the ground. Theſe have two advantages of the other, firſt, by being ſo much lower, they are leſs expoſed to the winds; and if the ground under them be kept clear from weeds, it reflects a greater heat to the fruit.

I have ſeen great crops of pears, apples, plums, and cherries, upon horizontal dwarfs, which I think is the moſt proper ſhape for trees of this ſort.

Tho' I have directed theſe dwarf-trees to be planted twenty feet aſunder, or more, yet I don't mean to have them extended until they reach one another; for there ſhould be left a ſpace four feet wide round every tree, to take a barrow on, either to carry weeds away or bring manure. They ought to have their winter-pruning as ſoon as they have ſhed their leaves, and the ground under them cleared of weeds and all manner of filth, and then covered over with coal-aſhes one fourth of an inch thick: this will add ſalts to the ſoil, and dry the ſurface, both which are of great advantage to the fruit.

The ground on which theſe trees are planted ought to be very clear from perennial weeds, and eſpecially the corn-bind or wild convolvolus, which are very injurious to trees, and very difficult to deſtroy.

CHAP. LXXXV.

Of Conical, or Convex Dwarfs.

AS graſs-plats in gardens of pleaſure are often adorned with flowering ſhrubs, I think if ſome parts were to be planted with the following fruit-trees, it would anſwer the ſame end, and be of equal beauty, and make a variety amongſt the others.

(Viz.) The nonpareil, and d'Api apples upon paradiſe ſtocks, the Jargonel, and Robin pears upon quince ſtocks, Cornelian cherry on its own root, the Duke cherries upon the paramdam ſtocks, and ſome of the beſt plums, all of which are beautiful both in flower and fruit; and alſo the minion fig, tho' it does not bear flowers, yet there is a variety in its leaves.

I ſhould chuſe their ſtems to be no more than a foot long, but they ought to be taken from the nurſery with five branches or more, the ſame as for a ſtandard fruit-tree, and their heads ſhould be cut the ſame way, as orchards every year:

That is, in ſuch a manner as tho' Fig. 6. were placed above the 7th, and the 5th above the 6th, ſo as to appear like B C and D, in Fig. 4. but not more than a foot and a half from each other in height.

CHAP. LXXXVI.

Of Standard Vines.

I Have already ſaid ſomething concerning the management of vines planted in the manner of eſpaliers; but in places guarded from the winds, they may be brought to bear and ripen, without being ſupported by a frame of wood, if the ſoil be proper for them.

The ground on which they are to be planted muſt be prepared and ordered in the ſame manner as for thoſe againſt walls, and their roots and branches cut and diſbudded

budded in the ſame manner, and planted four feet aſunder every way.

The ground ſhould be kept clear from weeds, and no more than one branch ſuffered to grow upon each plant the firſt ſummer.

In the winter or February after, they muſt be cut according to their ſtrength; and ſuch as have a ſhoot betwixt two and three feet long may be cut about a foot from the ground, and all the buds taken off except the two higheſt; for the three loweſt ſeldom produce any fruit, and the ſhoots that they would make would only weaken the reſt.

If a plant has made a weak ſhoot, there ſhould be only the fourth bud from the lower end left upon it.

But as a vine increaſes in ſtrength, ſo ſhould it alſo in its number of branches, till they come to eight, all proceeding from the top of a ſtem or head that is not more than a foot high.

And at the time of winter-pruning there muſt never be more than the third, fourth and fifth buds left upon a young branch;

the part above muſt be cut off, and the lower buds alſo.

In ſummer all ſuckers proceeding from the root ſhould be taken away at their firſt appearance, but thoſe branches putting out of the ſtem, about a foot from the ground, muſt be preſerved for bearers; as alſo ſuch ſhoots as put out of old wood at the top of the ſtem; and as many of theſe ſhoots as are preſerved, ſo many of thoſe branches proceeding from the third buds left on at firſt (that is, the loweſt buds left on the ſhoots in winter) muſt be taken off in the ſummer, for they can ſeldom be expected to bear, and all they were intended to do, was to produce ſuch ſhoots as would bear fruit the next year.

I chooſe to leave theſe ſhoots upon the ſtem, or near it, to keep the head of the tree in a little compaſs, which could not well be done by thoſe ſhoots which proceed from the third, fourth, and fifth buds that were preſerved in the winter.

As ſoon as the vines have ſhed their leaves, take away the earth from the ſtem of every one of them a foot round, till the roots are almoſt bare; and let them lie open in this manner about twenty days: (if the weather is froſty it will not be the worſe) then lay a ſpadeful of coal aſhes or lime to the root of every tree, and cover them again with earth.

They muſt be many times pruned in the ſummer, for it will make the fruit ripen better; and as ſoon as three joints appear above the fruit, one of them ſhould be nipt off, and all branches putting out of the bearers taken away at their firſt appearance, or cropt to one joint in length after: and ſuch ſhoots as are deſigned to produce bearers the next year, muſt be kept as ſhort as thoſe bearing fruit, or elſe the winds will be apt to break them.

CHAP. LXXXVII.

Of Raiſing, Planting, and Pruning of Gooſeberries and Currants.

THE gooſeberry is a dwarf fruit tree, but of the meaner ſort; yet the fruit is much improved by proper cutting, and a good ſoil.

It is eaſily raiſed from layers, ſuckers, cuttings, or from ſeeds, and ſhould be trained up in the nurſery with a ſtraight ſtem: each tree ſhould have ſix, eight, or more branches proceeding from it, for bearers, about a foot from the ground; and that which is the moſt upright muſt be tied to a ſtraight ſtake, faſtened in the earth near the root; and if the branch that is tied up be more than a foot long, the top muſt be taken off, and the lower buds likewiſe, leaving only ſix or eight at the upper end, in order to make ſhoots, which muſt be uſed as the former bearers; and as the ſtem advances in height, preſerve the ſame number of young ſhoots at every foot in height; but no upright ſhoots muſt be ſuffered to grow (except the ſtem) nor any branches to croſs one another.

Such young ſhoots as are deſigned for bearers, if their ends be dead, ſhould be ſhortened a little in the ſpring, which will make the fruit much larger; and it is alſo neceſſary, at the ſame time, to take away all ſuckers from the root.

The ſoil which a gooſeberry bears the beſt fruit upon, and makes the moſt laſting tree, is ſuch as I have before mentioned for the generality of fruit-trees, but the depth required is not more than ten inches; but if they or ſtrawberries be planted in a ſoil ſtronger, they will do better than in a looſe ſand or gravel.

I ſuppoſe there are many people who will think it not worth their expence to make any alteration in the ſoil for ſo common a ſort of fruit; but I think thoſe gentlemen who love to ſee things in perfection will diſpenſe with it; for as there generally are ſtrawberries planted upon the borders with them, a little improvement, if wanted, will be of ſervice to both, and the expence will not be more than one fourth of what is required for fruit-trees againſt walls, becauſe the borders need not be more than one half of the breadth or depth.

I think ten or twelve feet is the neareſt that the trees ſhould be planted to each other, for thoſe at five or ſix (which is the common way) do in a few years ſo much ſhade the ſtrawberry plants, that they are thereby rendered fruitleſs; and the pleaſure expected in the walk adjoining is loſt in the ſeaſon for ripe ſtrawberries.

I have juſt before given directions for the raiſing of trees in the nurſery, but there is ſomething to be obſerved in chuſing them to plant in places where they are deſigned to remain.

It is good to take ſuch as are free from moſs, whoſe rind is of a bright colour, and ſuch as have made ſtrong ſhoots the year before, at leaſt eight of them, at a foot from the ground, with one young branch going forward to lengthen the ſtem; this ſize is large enough to carry to places at a great diſtance. But if a tree be taken from the nurſery with ten branches, it is the better; for the greater number of branches there are taken off at the time of replanting, with the greater vigour will the tree grow after.

Note, If trees are not to be met with in a nurſery of the ſhape deſired, chooſe ſuch as may be moſt eaſily brought to them.

In taking up theſe trees, there ought to be care taken to preſerve as great a length of roots as poſſible; and likewiſe packed in ſuch a manner, as to prevent their becoming dry in the carriage; but if a tree is only to be removed in the ſame ground, I ſhould chooſe a larger tree, for then one of any ſize will grow.

Their roots muſt be cut by the rules before laid down for other dwarf-trees; and likewiſe planted at the ſame ſeaſon, in an upright poſition, but not deep; the heads may be cut either before or after planting, and in ſuch a manner as directed for their order in the nurſery, but with a leſs number of branches left on, as ſome of the roots will be deſtroyed by removing.

I think ſix branches enough, beſides the ſtem, at the time of planting, and if they are more than half a yard long, they may be cut to that length, and as they grow after planting, they are to be dreſſed as before directed for thoſe in the nurſery. But inſtead of eight or ten branches being left to each tree, whoſe ſtem is a foot in height, I would adviſe but ſix or ſeven; and if any of them be of a much greater length than the others, ſhorten them in the winter, by which the head will be more regular; and when any of them dies, or bears ſmaller fruit than uſual, let a young ſtrong branch be preſerved for its place, and the old one taken out in the winter; but if the young one naturally ſtands in a poſition more upright than the old ones, it muſt be confined lower, by a ſmall ſtick put over it, and under thoſe two old ones neareſt.

Likewiſe obſerve, when you dreſs the trees in ſpring, to clear all moſs from them; and by theſe rules a tree will be kept in health for many years.

The currants are to be ordered in all reſpects like the gooſeberry, but they will not proſper ſo well in a very ſtrong clay; there are various kinds, but the ſorts moſt valuable for common uſes are the white and red Dutch: there is good wine made of the black ones, beſides both fruit and leaves are of uſe in medicine.

The ſtrawberries upon the borders muſt be thinly planted, if good fruit of all kinds be expected: they muſt be at leaſt a yard from the trees, and if hautboys two feet from each other, and of all other kinds half a yard; the runners muſt be pulled off at their firſt appearance, and no more roots ſuffered to grow than what are planted.

CHAP. LXXXVIII.

Of Barberries, and their Culture.

THERE are only two ſorts of barberries, the one with ſeeds, and the other without; the former grows wild in hedges and woods, but the latter, which is moſt valuable, I have not ſeen any where but in gardens, generally growing wild in wilderneſs quarters, amongſt flowering ſhrubs, where they are very ornamental, not only in the time of their flowering, but likewiſe, in autumn, their ſcarlet-fruit makes a beautiful appearance for a long-time.

They are increaſed by ſuckers or layers, and though they are by nature of a larger growth than gooſeberries, yet if they are cut the ſame way, it will make both the berries and the bunches larger, and reduce the tree to a handſome ſhape, without too much formality in it.

I don't think a tree of this ſort would be diſagreeable upon a graſs-plot, amongſt the fruit before-mentioned for that purpoſe; but if they are only deſigned for the benefit of the fruit, they may be planted upon borders as gooſeberries are.

CHAP. LXXXIX.

Of the Ordering of Raſberries.

THE raſberry plant cannot properly be called a fruit-tree, yet as the fruit is valuable, I ſhall give my method of planting, dreſſing, &c.

I am only acquainted with four kinds, except the flowering ſort, viz. the common, ſmall red and white; the other two ſorts are much larger, of the ſame colour, and are called rombullions; the former has the richeſt flavour, but in dry ſeaſons they are apt to wither if they are planted upon ſand or gravelly land, but will bear well on loam or clay, that is not too wet.

The latter ſorts bear well upon any ſoil that is moderately dry, if there be four inches depth for their roots to grow in, before they are interrupted by a rock or the like.

As there is no poſſibility of ſtrawberries proſpering under them, I therefore chooſe to have the raſberries in a quarter or plat of ground alone, and not upon borders as gooſberries and currants.

The proper time for planting raſberries, is, from the end of October to the beginning of March, in moiſt weather; and the ground ſhould be cleared of quitch graſs roots, and all other weeds.

The plants made uſe of for this purpoſe are no other than ſuckers, which riſe annually from the horizontal roots that come from old ſtocks, and the ſtrongeſt ought to be choſen, with as great a quantity of roots as can conveniently be taken with them.

If they are become dry in their removal, there can't reaſonably be any fruit expected from them the firſt year; for which reaſon, I adviſe to have them cut to about half a yard long, for if they were left of a much greater length, the ſuckers that riſe from their roots would be too weak for bearing the enſuing year. The plants, which are only removed from one part of a garden to another, may very eaſily have their roots kept moiſt, and likewiſe ſome earth adhering to them; there is no doubt but ſuch plants will bear the firſt year, and likewiſe produce ſtrong branches from their roots, fit for bearing the ſecond year.

The roots of all muſt be examined before planting, and thoſe fibres which are become dry and dead muſt be cut off; but the ſtrong roots, if alive, ſhould only have ſuch ends taken off ſmooth with a knife, as were cut by the ſpade in taking them up.

I have obſerv'd raſberries planted about half a yard from each other, and ſometimes nearer, upon beds of four feet broad, though with a ſpace of two feet between each bed; and in a very few years, the riſing branches, and thoſe bearing fruit, deprive each other of the greateſt part of the benefit which the ſun offers to both; for which reaſon, I chooſe to plant them at three feet apart in the quincunxes order.

The manner of placing them in the ground, is the ſame as directed for dwarf-trees of the ſmaller ſorts; and if the firſt ſpring and ſummer, after they are planted, ſhould prove dry, they will require to be watered three times a week, and the number of the young branches riſing from the roots ſhould be examined in ſummer; and if more than four appear from one plant, the weakeſt muſt be pulled off to make the other ſtronger, and the ground muſt be kept clear of weeds in the ſummer, tho' there may be a broad bean ſet the firſt year between every two plants.

The ſtem which was planted will be dead the next winter, for the parts above-ground do not live two years, for which reaſon they ſhould be cut from amongſt the others.

The fruit is always produced upon collaterals, which come from thoſe branches that grew from the root the ſummer before; and if there be two, three or four at a root, cut a little off their tops, then plat them together, in ſuch a manner as to make them ſtand upright, and dig the ground over, and they will require no other order in the winter.

The ſecond ſummer after planting, there may ſix branches be ſuffered to grow from each root, and the winter enſuing they muſt be uſed like thoſe the year before; and when the roots are come to their full ſtrength, ſuffer eight or ten branches to grow from each of them, and in the winter give them the uſual order.

CHAP. XC.

The Ordering of Borders, that have been properly made.

AFTER wall-trees have had their winter-pruning, the borders ſhould be thoroughly cleaned from all leaves and weeds, and ſuch ſorts of manure applied as the nature of the ſoil requires.

For land which is naturally inclined to clay, coal aſhes or lime are moſt proper; but for ſand, gravel or creach, then ſoot, pigeon-dung, netting, or brine of equal ſtrength.

After the nature of the ſoil is conſidered, and if the borders were made as before directed, each ſort of manure preſcribed for the different kinds of ſoils muſt be proportioned in the following manner, viz. for every perch of clay-ground, three pecks of lime, or four of aſhes; and for ſand, gravel, or creach, four pecks of ſoot, or two of pigeon-dung, or elſe three gallons of netting or brine.

As ſoon as the ſurface of a border is covered with any of them, let it be dug over with a three-grained fork, theſe inſtruments being leſs prejudicial to the roots of trees than ſpades.

But when the borders are thus prepar'd and ordered, I do not mean to have them planted with colliflowers that are to remain for a crop, or with early beans or peaſe, for theſe things are very prejudicial to fruit-trees.

If there never was any thing ſuffered to grow upon borders, it would be much better for all kinds of fruit-trees, eſpecially peaches and nectarines; but as many people may, perhaps, think it a pity to loſe the benefit of ſouth borders for early crops, I therefore adviſe, that only ſuch things be raiſed on them as may be taken off in the month of April at fartheſt, as young ſallading, or the like; or, if lettices are planted in the beginning of November, or a little earlier, they will not do much hurt, provided they are pulled up by the roots in the ſpring, and not ſuffered to ſeed.

The borders ſhould be always kept clear of weeds; and, about the latter end of July, or beginning of Auguſt, dig them over again with a fork, and then cover them with ſuch ſort of manure as directed in the ſpring, about half the quantity; and after that, if the ſeaſon is dry, water them plentifully in the evening, it will cauſe the ſalts that were dug in winter to mix with the earth, and thoſe remaining upon the ſurface to continue moiſt: but never dig in weeds, or ſtable manure, and let the borders be always kept clean by ſprittling and raking.

As to thoſe borders on which eſpaliers or dwarfs grow, if they are planted with ſtrawberries, ſuffer none to grow within a yard of the trees; and if they be kept at half a yard from each other, the fruit will be better for it, though it is beſt for the trees if there be none; they muſt likewiſe be dug and manured in the winter, the ſame as directed for others, which muſt be again repeated as ſoon as the ſtrawberries are gathered.

As what has been already ſaid of borders, relates only to thoſe made according to the former directions, I will therefore, in the next place, ſay ſomething concerning old ones.

CHAP. XCI.

Of the Ordering of old Borders.

MOST old borders that I have ſeen, do not exceed four feet in breadth, many having an edging of box next the walks, and commonly filled either with large growing flowers, or elſe with peaſe, colliflowers, or ſome other kitchen vegetables; but theſe things, as I ſaid before, are very prejudicial to wall-trees, eſpecially peaches and nectarines, which I have obſerved in trees from one year old to twenty.

In the firſt place, the borders muſt be cleared of all thoſe incumbrances, and not crowded with any thing more than what I have directed to be planted upon thoſe new made; after that let them be trenched in the following manner, and ſalts added, according as the texture of the ſoil requires.

Firſt, open the border at one end, the whole breadth, and about a yard in length, taking away the earth, till the uppermoſt roots root are not covered above an inch deep; this done, if the ſoil be a clay, cover the part thus opened with coal aſhes, ſifted fine, about one fourth of an inch thick, or with lime ſomewhat more ſparingly; then from the ſame compaſs of the ſurface of the border, as directed for the firſt opening, take as much earth as will cover the part thus manured about three inches thick, and what earth remains on that laſt opened, more than an inch deep above the roots, muſt be taken away; otherwiſe it will be of as ill conſequence as planting too deep, by depriving the roots of a ſufficient heat from the ſun.

Trench the borders in this manner all over; and if they are too narrow, add to their breadth where it can be done.

For ſoils of a ſandy looſe nature, ſoot is the moſt proper, and muſt be uſed in the ſame manner as before directed for aſhes on clay ground; or for want of ſoot, pigeon dung, about half the quantity: and if theſe things are done in the ſummer, or when the earth is dry, water plentifully in the evening all that has been trenched that day.

After the borders have been thus trenched and manured, they muſt in all ſeaſons be ordered according to the directions given for managing thoſe new made.

My reaſon for leaving a thin covering of earth upon the roots, is, in order to prevent the ſalts, contained in the manure, from entering them whilſt they are too groſs and acrid, for then they are apt to rent the pores, but after paſſing through the earth, they become more refined and fitter to be received by the roots; and that earth laid above the manure keeps it moiſt, whereby it will be more ſerviceable than if it had been laid upon the ſurface. Old borders are often annoyed by roots proceeding from eſpaliers, or ſtandard trees which rob thoſe planted on them; when this is the caſe, ſuch roots muſt be cut thro', at the greateſt diſtance they will admit from the walls, without injuring the trees belonging to them; and then the roots thus cut muſt be pulled out, otherwiſe they will putrefy, and be very deſtructive to the tender roots of thoſe trees growing upon the borders.

There is another thing, which tho' ſeldom taken notice of, yet is of bad conſequence to wall trees, and that is, their being ſhaded by ſtandards or eſpaliers, whereby the ſun is prevented from darting its rays freely upon them, and all ſuch obſtacles ought to be removed out of the way as ſoon as poſſible, although they don't drop upon the borders, but only ſhade the trees growing thereon by their height.

Having before only mentioned ſuch things as may be ſuffered to grow upon borders having ſouth, ſouth-weſt, eaſt or ſouth-eaſt aſpects; yet as the other aſpects are of as much ſervice in the ſummer as thoſe are in the ſpring, I will therefore give ſome few directions concerning them: and in the firſt place, before any thing can be either ſowed or planted on them, they muſt be relieved with manure, and ordered according as the ſeaſons and nature of the ſoil requires; after that is done, the ſame ſorts of things may be propagated on theſe in the ſummer as directed for the others in the ſpring; but let none be allowed to grow high, or ſeed; and if it is a garden of pleaſure only, then a few annuals of a ſmall or middle ſize may be planted on them.

There are two things more neceſſary to be obſerved; that is, the nature of the ſummer, and the quantity of fruit upon the trees.

If it be a wet ſeaſon and a large crop of fruit, give the borders once a month a thin covering, that is to ſay, half as much at a time of the ſame ſorts of manure as directed for them in the ſpring; but if the ſummer is dry, and the trees be either weak, full of fruit, or young ones of the laſt year's planting, then it is neceſſary to water the borders three times a week; but this muſt be done in the evening, otherwiſe the ſun will attract too much of the moiſture before it can deſcend to the roots of the trees.

Where there is a great quantity of walnuts gathered, I would adviſe to have the huſks, ſo ſoon as taken off, ſpread about an inch thick on the borders where peaches and nectarines grow; and after the trees have been pruned in the winter, let them be dug into the earth with a fork. There is a ſalt in them which is deſtructive to inſects, and ſtrengthening to trees.

Where the ſea-coaſt is near, the expence of other manures may be ſaved; for the water and the clay is the beſt that is for ſandy ſoils, and ſo is the ſea-ſand for clay ſoils; but the water alone is not to be applied to the leaves or branches of any plant, though, when it is mixt with a treble quantity of freſh water, it is as proper to waſh blighted trees with, as the mixture before directed for that uſe; but there ſhould not be more than one half ſo much of it uſed as is before directed for ewring.

The blood of any kind of animal is of ſervice to fruit-trees; and when a horſe is let blood in a ſtable, as it is eaſy to preſerve it, I think it is a pity it ſhould be loſt, for it is of as much ſervice as an equal quantity of ſea-water, and may be uſed in like proportion.

I am apprehenſive that what I have ſaid upon ordering of borders will be made a joke of by many, who will ſay, I attempt to give more than neceſſary trouble to thoſe who have fruit-trees under their care; and they will preſently tell where there are wall-trees thrive, and bear plentifully without any ſort of border or, upon ſuch where there are many flowers and an edging of box.

I own that a pear, apple, plum, apricot, fig, vine, and ſome kinds of cherries, will, where the ſoil is of a proper ſort within, though it be covered with graſs, gravel, or paved; and if the vines be low ones, the grapes ripen earlier, with gravel, or pavement near them, than if there was none.

But I never ſaw the beſt ſort of peaches and nectarines, nor even ſome kinds of cherries, proſper well in any ſuch ſituations; but were generally annoyed with the honey-dews, and ſmother-flies, even to the deſtruction of the greateſt part of every one of their young branches; which tends to the loſs of fruit, or at leaſt of good fruit: for where the upper ends of branches are killed, the others don't bear ſo good fruit as thoſe that are whole; as I will anſwer for it they will, if the borders are made and ordered as I have directed, admit the trees have other things neceſſary done to them when required.

I could expreſs where this practice has been ſucceſsful in many places; but perhaps the owners would not like to have their names mentioned, for which reaſon I will not enter upon many particulars; but this I will ſay, that in November 1750, I prepared a border for a gentleman, and planted it with fruit-trees of ſeveral ſorts. Sixteen of them are peaches and nectarines, which have all bore fruit, many of them the ſecond year, and never had the end of a branch killed; moſt of them are very extenſive trees, and have been planted but four years, and under my care.

CHAP. XCII.

How to preſerve Bloſſoms, and young Fruit from Froſts.

THE firſt thing deſtructive to fruits, is violent froſts in the ſpring, which kill the bloſſoms and young fruit, eſpecially of the apricots, for it bloſſoms earlier then any other ſort. Trees growing againſt walls may, in ſome meaſure, be preſerved from this miſchief, by ſhading them with branches of laurel, yew, or beech, and in calm weather there is much fruit ſaved by this means; but if the ſeaſon is tempeſtuous and windy, then part of the bloſſoms and young fruit are frequently beat down by the ſhades; yet, notwithſtanding the diſadvantage, I have obſerved more fruit generally upon trees that have been ſhaded, than thoſe expoſed to the weather, though againſt the ſame wall: I always found the branches before mentioned preferable to matts for ſhading fruit-trees, and that they were applied with the moſt ſucceſs, provided they could be ſo fixed as not be diſplaced by the winds.

After the trees have once been accuſtomed to theſe ſhades, it is not prudent to take them away too ſoon; for it makes the bloſſoms and young fruit ſomewhat tenderer than when they have been conſtantly expoſed to the weather; and as the ſpring is a very inconſtant ſeaſon, we ſhould not be tempted by two or three fine nights, to leave the fruit unguarded, before they have ſtrength enough to reſiſt any inclemency of weather, or any natural leaves to ſcreen them from the cold.

Stone fruit ought to be guarded in this manner till they have quite ſhed their bloſſoms, and pears till their firſt leaves are almoſt full grown.

When the weather is inclining to what we commonly call black froſts, as it often is in the ſpring, I have made uſe of another method to preſerve fruit with great ſucceſs, which is only watering the borders every afternoon when the trees are in bloſſom, and this has produced the deſired effect; for in this ſort of weather there being no dews in the nights for the trees to imbibe, their juices become thick and glutinous, and conſequently ſlower in motion, whereby they leſs reſiſt the penetrating force of the froſt.

Perhaps ſome may object againſt watering, and ſay, that it is too cold and periſhing in ſuch ſort of weather: but whoever ſhall be pleaſed to make trial, will find the contrary, for it increaſes heat in the trees, by accelerating the motion of their juices, eſpecially where the borders on which they ſtand have been prepared and ordered, as before directed. Where borders are old, and become poor by having had many crops growing upon them, or if they have been manured with dung that was not quite rotten, then add to every gallon of water one ounce or more of common ſalt; and if thoſe trees that are ſhaded be watered once a week, it will do them ſervice.

CHAP. XCIII.

How to prevent Caterpillers deſtroying Fruit upon Wall, or Dwarf-Trees.

I Shall not attempt to deſcribe the various kinds of inſects; but I have obſerved two ſorts of caterpillars, or at leaſt thoſe of two colours, feed upon fruit-trees, the one black, and the other green: the black generally make their appearance in March, if the ſeaſon be dry, upon the pear-tree, apple, and ſeveral others.

Sometimes there are great numbers of them, in a ſort of kel or web; and if they are to be come at, I chuſe to take them off, or otherwiſe they will diſperſe themſelves to all parts of the tree, and there feed upon the bloſſom leaves, or their buds, before they are unfolded. After they have lived in this active ſtate, ſometimes they conceal themſelves, either in a bunch of leaves, or in a cavity of the rind of a tree, where many of their eggs are hatched the ſame ſummer, and become very deſtructive. I think ſome eggs are preſerved the ſame way all winter; for when I have been dreſſing fruit-trees in February, I have found many of their eggs, and ſome kindled, though of a white colour, as I ſuppoſe they all are, before the air changes them, in old nail holes and under pieces of dead bark.

Which cauſes me to waſh the walls, in order to deſtroy them; and I think the method of dreſſing dwarfs and ſtandard-trees muſt have partly the ſame effect.

The green caterpillar that feeds upon fruit-trees, for ought I know, may be the ſame as thoſe that were black at their firſt appearance, but by green food their colour may be changed, for the latter I have never ſeen ſo early in the ſpring as the former; but I have found them very prejudicial to both the young branches and fruit of the apricot, cherry, plum, apple, pear, currant, gooſeberry, &c.

I never obſerved theſe in great numbers together in any ſort of web or kel; but I have generally found them ſingle, ſometimes wrapt up in the extremity of a new made branch of the fore-mentioned trees, or otherwiſe in a bunch of bloſſoms of an apple, pear, plum, or cherry-tree, and ſometimes on an apricot, with a leaf to cover them. In wall trees or dwarfs, whoſe branches are within reach, part of their ill effects may be prevented. If they be at the extremity of a branch, it will appear in a round knob, and they generally eat off the part they had wrapt together; which ſpoils the branch the next year. When they have incloſed themſelves in a bunch of bloſſoms or young fruit, then they prove very deſtructive, by generally eating into all they had joined together, which cauſes much fruit to drop off ſoon after, and others when they are more grown.

Some of thoſe that are but ſlightly eat, will continue upon the tree till the time of gathering, but they never make good fruit, being generally ill taſted, and many times have a white grub within them.

When the caterpillars are firſt perceived upon wall or dwarf-trees, if it be before or after they are wrapt up, I have prepared a brine the ſame as for waſhing of walls at the time of pruning, and therein dipt a bruſh or beſom, and ſwept the trees all over; this has deſtroyed many, by beating ſome off and killing others. This work ſhould be often repeated, if there be a neceſſity for it, as there generally is in dry ſeaſons.

Note, I think a ſmall engine would be the propereſt inſtrument for this work. I ſometimes make uſe of a more effectual remedy upon wall or dwarf-trees, though it is very tedious to perform, but yet, I think, it may be practiſed by ſome gentlemen who have leiſure to do it; for if they be curious in fruit, they will take pleaſure in procuring them.

Viz. If the aforementioned fruit-trees be carefully obſerved every day in the ſpring, it will eaſily be ſeen when a bunch of bloſſom leaves or young fruit are joined together by a caterpillar: upon the firſt diſcovery of them, ſeparate them with your hand, and kill the caterpillars; there may be a young branch or a bunch of fruit ſaved by it, which otherwiſe would certainly have been deſtroyed. Whoever does this work as often as it is required, will never have much of their fruit deſtroyed by ſuch inſects; which, by long experience, I know to be more deſtructive to the fore-mentioned fruits, than any other cauſe that happens in the ſpring; though many will attribute the ſcarcity of fruit to blaſts, or lightening, or the branches being ſun-burnt, which are the common conſtructions put upon the effects of thoſe inſects.

CHAP. XCIV.

How to preſerve Fruit upon Standard Trees from being deſtroyed by Caterpillars.

WHEN ſtandard-trees are properly ordered with cutting and dreſſing, they will not be much ſubject to be infected with caterpillars; for thoſe trees that are not dreſt at all, taking off the old rind, and cleanſing the cankered parts, deſtroy many of theſe inſects, as alſo their eggs concealed in theſe places; and by keeping the branches thin and open, they are more eaſily ſhaken off by the winds.

Mr. Bradley compares theſe inſects to ſilk-worms, which drop from mulberry trees in Italy by thunder; but I don't imagine that the cauſe of their falling is owing to the thunder only, for I ſuppoſe there generally are ſhowers of rain deſcending at the ſame time, which beats part of them down.

He further ſays, that diſcharging of great guns near fruit-trees, will have the ſame effect as thunder, in cauſing the caterpillars to drop from them: but this ſcheme, I preſume, will not often be put in execution, as few have it in their power, not being provided with guns; neither is there neceſſity for being at this trouble, ſuppoſe it would produce the deſigned effect; for watering is leſs expenſive, and I think is as good a remedy againſt this evil. As moſt noblemen have at their ſeats engines for extinguiſhing fire, which are very proper inſtruments for watering orchards, or ſuch trees as cannot be reached with a bruſh or ſmall hand-engine, if orchard-trees are watered all over with theſe engines two or three times a week, it will deſtroy many of the caterpillars; and the water falling on the ground will add new vigour to the trees, and increaſe the motion of their ſap, which will cauſe greater plenty of fruit.

This ſhould be done in the heat of the day, for then the caterpillars hang the looſeſt upon the trees, and are therefore more eaſily beat down, and the water ſhould be mixt with ſalt. This work is not only neceſſary when the trees are in bloſſom, but alſo before and after; for, in the beginning of March, I have ſeen the caterpillars eat the bloſſom buds before they have been unfolded, and likewiſe the fruit, as before obſerved: but where engines are not to be had, I have known great ſervice done by ſmoaks from damaged hay ſet on fire in the evening.

CHAP. XCV.

Concerning the Honey-Dews, and Smother-flies upon Fruit-Trees; and how to prevent their ill Effects upon ſuch Trees as are planted in new Borders.

THE honey-dew is a glutinous ſubſtance, very prejudicial to many kinds of fruit-trees; for it contracts the minute veſſels of their moſt tender parts, and prevents their imbibing and perſpiring ſuch fluids as are required in vegetable life, whereby ſome of the leaves and ſhoots never come to their proper ſhapes.

This noxious matter may eaſily be perceived either by its ſweet taſte, from whence it takes its name, or by adhering to the fingers when touched, as alſo by its glittering appearance on the youngeſt parts of ſhoots, and on the leaves before they are quite unfolded; which is the reaſon why their under ſides are moſt blemiſhed, becauſe the ſide of the leaf firſt appearing, becomes the loweſt when full grown.

A few days after the honey-dew appears you may diſcover ſmall inſects on the under ſide of the leaves that are ſhrivel'd almoſt without motion; yet the heat of one fine day will make them viſibly increaſe both in bulk and ſtrength, and likewiſe more in number. Though at firſt they have no appearance of wings, yet if the weather continues dry and warm for ten or twelve days, they will be furniſhed with wings, whereby they ſoon after take their flight; but there are many ſucceſſions of theſe inſects, and honey-dews in ſummer, which prevents the thriving of many branches and leaves of fruit-trees.

It is imagined by ſome, that this clammy matter is perſpired by the trees, and that the inſects come thither only to feed upon it; but by the former obſervations it plainly appears to the contrary; for they are almoſt void of motion when firſt perceived on the trees, and therefore cannot be ſuppoſed to come thither for that purpoſe, but ſeem rather as though they bred where they are firſt diſcovered, becauſe of their growing much during their continuance there, and being incapable, at their firſt appearance, of moving to diſtant places for want of wings.

Others ſay, that theſe inſects are either hatched or brought up by eaſterly winds: and this opinion ſeems the moſt probable, for they generally increaſe moſt when the wind continues in that quarter; but I think the weather being generally dry then, is the greateſt cauſe of their appearance.

I have ſeen them upon trees in due weſt aſpects, and all others, in dry weather, but I never ſaw them upon all trees alike, even thoſe that were planted againſt the ſame wall, neither upon all the young branches of one and the ſame tree, but I have generally obſerved the honey-dews to adhere the cloſeſt to the weakeſt trees, or to thoſe ſhoots which are the weakeſt or moſt ſpungy; and wherever the honey-dew cauſed the leaves to curl, ſoon after there were ſmother-flies on their under parts. Undoubtedly all trees upon the ſame aſpect, and all the branches of one tree, muſt receive the ſame outward cauſe, to be blighted, and one as much as another; by which it is plain, that the ſeparate parts of a tree, or ſeparate trees, are in different ſtates of health, becauſe all do not receive the infection alike. I muſt own I don't know how the ſmother-flies are bred; perhaps they may be in the ſap of the trees they are upon, but I rather imagine from eggs or ſpawn, firſt laid by inſects of the ſame ſpecies upon the ſurface of ſtagnant waters, which being from thence attracted by the ſun into the atmoſphere, and carried by the winds to different places, in the ſhape and ſubſtance of the honey-dews, and lighting upon ſuch branches of trees as are ſuitable for its reception, continues there till the inſects are hatched and brought to maturity; but a great part of this matter falls upon branches or leaves of trees, where it ſeldom hatches, as may be ſeen by its glittering appearance on the leaves of the apricot, and ſeveral other trees that are healthful, which are more ſmooth and compact, when young, than thoſe of an unhealthful peach and cherry, into which it penerates; as alſo the plum, currant, gooſeberry, and many others.

This pernicious matter is more injurious to the fore-mentioned trees (if weak or their branches ſpungy) than any thing elſe that naturally happens to them; for it retards the motion of the ſap, at the extremity of the branches, which prevents the fruit below from coming to any tolerable perfection, and damages the young branches to ſuch a degree, that they are never after capable of bearing good fruit.

Beſides, many trees are intirely killed thereby, if proper methods are not uſed to prevent it.

Tho' different kinds of ſmother-flies, or thoſe of different colours, are found upon different ſorts of trees, yet as they all either breed from, or feed upon the honey-dew, it therefore appears that all trees require the ſame care and management, to preſerve them from theſe evils, for no tree proſpers well when either the honey-dew or ſmother-flies are on the extremities of its branches.

But both are to be ſeen upon ſome trees in dry weather, and when there are not much dews in the night for the trees to imbibe, whereby they become leſs vigorous in their growth, and the tops of the branches become dry; whereby this glutinous matter adheres more cloſely, and the motion of the ſap being ſlow, is leſs able to reſiſt its penetration.

If trees are planted a proper depth, in borders made according to the former directions, and pruned according to the rules I have given, then there is nothing more required, in this caſe, than to water the borders, in the afternoon, three times a week, in a plentiful manner: if the weather be dry, and the honey-dew appears upon the trees, this management will make the trees ſhoot, by rendering the ſalts near the roots more liquid, and add new vigour to the motion of the juices; and the vapours ariſing from the ſurface of the border will cauſe dews upon the leaves, whereby the clammy matter will be prevented from adhering to them.

And if the ſeaſon be wet, ſpread common ſalt all over the border, about eight ounces to each tree; for the more ſalts the juices contain which form the young branches, the more compact and ſmooth their leaves will be, and thereby leſs ſubject to the penetration of the honey-dews, than when they are compoſed of juices more watery, whereby the leaves become very porous.

If trees are thus ordered at all times, when the honey-dew appears on them, neither it nor the flies can ever do them much injury.

CHAP. XCVI.

Of the Honey-dews and Smother-flies on Fruit-trees growing in old Borders.

TRees growing upon old borders that have not been improved according to my directions given for that purpoſe, and have been improperly pruned, muſt be ordered in a different manner to the former, for ſometimes thoſe trees are too deep in the ground, or the borders may have too much undigeſted matter in them, and not depth enough of proper ſoil; and if the roots be entered into ſoil that is too wet, be it either ſand or clay, then trees will produce ſpungy ſhoots, which are liable to ſuffer by the honey-dews.

Or if, at the time of winter-pruning, there be too great a quantity of wood left in the trees, or wounded parts, by bruiſe or cut, then weak ſhoots are produced, which often become blighted in the ſummer, though pruning will remedy theſe diſorders.

If the borders be impoveriſhed by having either too much kitchen-ſtuff or flowers growing upon them, the trees will be too weak; and if the weather be dry, they muſt be watered plentifully three times a week, with one ounce of ſalt added to each gallon of water, or with the ſame mixture preſcribed for vines, according to the directions given for managing old borders, and trencht as ſoon as poſſible.

If the flie be ſtrong, double the quantity of ſalt before directed, and water the bottom of every tree before the ſoot or lime is laid on at the time of trenching.

But if there is not an opportunity of trenching, nevertheleſs water thus mixed muſt always be uſed for the above purpoſe, and the borders dug over with a three-tined fork, that the moiſture may the earlier reach the roots of the trees.

I have

I have found theſe methods ſucceſsful, even when the flies have been very ſtrong upon the trees, and have, in a few days, deſtroyed many of them, and cauſed the trees to ſhoot vigorouſly.

There is another method that more expeditiouſly kills the flies, but it is ſubject to kill too many of the leaves, if made too ſtrong, and is alſo detrimental to the fruit.

However, the manner that I have performed it with the greateſt ſucceſs, is this: mix water with ſalt, two ounces to the gallon; then take ſuch a bruſh as is mentioned amongſt the inſtruments uſed in gardening, dip it in the water, after the ſalt is quite diſſolved, and waſh the trees with it in the evening, obſerving to begin at the bottom of the tree, and make all the ſtrokes upwards: by that means the water will fall chiefly on the under ſide of the leaves, where it is moſt wanted. This will occaſion the infected leaves to drop off the trees, but will not injure the healthful ones; and, if it be not too late in the ſummer, the trees will make good ſhoots after, even ſuch as will produce fruit the next year on peaches or nectarines.

CHAP. XCVII.

How to preſerve Fruits from Ants, Birds, Waſps, Flies, Snails, &c.

THE ants are much complained of for deſtroying fruit and leaves; but when borders are rightly prepared and ordered, they cannot live; nor in old borders, after they have been trenched and watered with the compoſition mentioned for that purpoſe; but it ought to be obſerved that the ants in a border are generally near the wall, for which purpoſe there ought to be a little drill made with a hoe cloſe to it, and that part watered the moſt plentifully.

Againſt old walls either of brick or ſtone, they are the moſt troubleſome, for as they lodge in the nail holes, the watering of the borders only has no effect upon them; but the walls ſhould be watered all over with two ounces of ſalt to a gallon of water.

It is beſt to do it with a ſmall engine, the force of which will drive them out of their holes; but I ſhould chuſe to have the walls pointed with lime mortar as ſoon as the trees have ſhed their leaves.

I have deſtroyed many by ſuffering them to eat into a nectarine pretty deeply, then dipping it into a pan of fair water by which they leave the fruit, and if it be after laid upon, or near the tree, there will others reſort to it, and may be killed the ſame way.

The horn or ſhell ſnails are likewiſe noxious to fruit-trees; and ſhould therefore be carefully ſought for in the ſpring and ſummer every morning, for then they appear moſt, and are ſooneſt deſtroyed; and at the time of winter-pruning, it is good to kill all that can be found in their holes.

Cherries and other fruits againſt walls may be preſerved from birds by nets; but this method is not ſufficient for guarding peaches, nectarines, plums, pears, grapes, figs, &c. from flies and waſps, which will be ſure to have a taſte of the beſt fruit, notwithſtanding all our care.

As to deſtroying of waſps, I can give no other directions than what is generally practiſed, by demoliſhing all the neſts that can be found in or near a fruit garden; and as theſe are inſects of great increaſe, the earlier this is exerciſed in the ſpring the better; for if we conſider that every neſt is the production of one waſp that has lived all the winter, 'tis eaſy to imagine that the killing of one in the ſpring, at their firſt appearance, is of as much ſervice as deſtroying a whole neſt later.

Many waſps and flies are alſo deſtroyed by placing near the fruit-trees phials half full of water, and making the mouths of the veſſels ſweet every day with honey, coarſe ſugar, or the like.

Yet, as I ſaid before, the earlier in the ſpring theſe devices are uſed, the more good they will do.

But the moſt effectual guard that I know for grapes, is caſes made of crape, gauſe, or the like ſort of ſtuff, large enough to contain a bunch, and tied round the ſtalk juſt above the berries, which may be done without bruiſing them; this gives a deal of trouble; but the beſt bunches deſerve to have it beſtowed on them, provided they can thereby be preſerved.

I have likewiſe preſerved nectarines by nailing cloſe to the wall a large piece of crape ſo as to cover a dozen or more that grew near together.

CHAP. XCVIII.

How to gather Summer Fruits.

ALL kinds of ſummer fruits muſt be gathered in the morning, or elſe they will eat flat.

Cherries ſhould be full ripe before they are gathered, which may be known by their colour, for the reddeſt ſorts will be changed on the ſides next the ſun to a very deep colour almoſt black; and thoſe of the paler kinds will be quite red on the ſun ſide.

In getting them from the trees, their ſtalks ſhould be nipt off from the branches by the thumb and fore finger; for pulling breaks off the buds that might produce branches or bloſſoms the next year.

When plums are ripe they will quit their ſtalks eaſily, if you give them the leaſt twiſt with the fingers; but they ought not to be much handled, for it takes off the blue which is their beauty.

Peaches and nectarines are much the beſt when they are ripe enough to fall from the healthy branches of their own accord, and never ought to be gathered too early.

If apricots in growing don't touch each other, they ſeldom drop off the tree before they are too ripe for moſt palates, nay ſome times their upper end will become rotten before they naturally quit the ſtalk; they are generally deemed in the greateſt perfection when the part next the ſun becomes a little ſoft, or the end begins to open. It is an old and very good cuſtom to gather a fig when there is a drop of water hangs at its end, for that is a certain ſign of its being ripe; but there are ſome ſorts that are ſubject to burſt, and never has a drop but when the ſmall end quite to the ſtalk is become nearly of the ſame colour as the large end, then it is certainly ripe.

Grapes ſeldom rot upon the vines by being too ripe, and thoſe appearing the moſt tranſparent are always the ripeſt; but all berries on the ſame bunch are ſeldom ripe alike, eſpecially of ſome ſorts, and therefore, before they are brought to the table, the ſmall, unripe and rotten berries muſt be pickt off.

Some of theſe bunches may, by the methods before directed, be kept eatable till Chriſtmas, but theſe ſhould be gathered from the vines before they are touched by the froſts; and after they are picked as before directed, pack them up in ſmall jars, between layers of wood aſhes ſifted fine, inſtead of moſs.

All ſuch pears as would come to maturity on the trees, are better gathered three or four days before they are ripe, otherwiſe they will eat meally; and ſeveral kinds will rot at the cores before they will fall ſpontaneouſly from the trees.

CHAP.

CHAP. XCIX.

Gathering and Preſerving Autumn and Winter Fruits.

SOme kinds, when they are full grown, will fall from the trees before they are ripe; theſe may properly be called winter and autumn pears; and when the healthy ones of theſe kinds begin to fall, it is a certain ſign they want gathering, which ought to be done when the fruit is quite dry; but they are ſeldom all ready for gathering at the ſame time, and this may be eaſily known by moving the fruit gently upward; and thoſe that don't quit their ſtuds ought to be left upon the trees ſometime longer, for what are gathered by greater force are ſubject to ſhrivel, and not well flavoured.

As pears are the beſt fruit the winter months afford, they are worthy of the greateſt care in preſerving; and, if rightly ordered, may be kept fit for uſe till the next ſeaſon will furniſh us with a new ſupply; which may be eaſily done, if the following directions are carefully obſerved.

After the pears are gathered, lay them on heaps in the fruitery, and cover them with woollen cloths; this will cauſe them to perſpire, which will be received by the cloths. No time can be limited for their continuance in the couch, for ſome kinds require more than others; but when the greateſt ſweat is over, it is then proper to take them out, and rub them one by one with dry linen cloths; after this the autumn kinds muſt be divided, every ſort into two parcels, the largeſt from the ſmalleſt, for it is a pity that one of the latter ſhould damage the former by rotting amongſt them; and then lay them in ſingle layers, and not one upon another, whereby the ripeſt may be more eaſily diſtinguiſhed, and taken for uſe firſt, without handling the others; and when any are rotten, they muſt be picked out as ſoon as diſcovered, otherwiſe they will decay thoſe that touch them.

After winter pears have been couched, dried, and divided as the former, the beſt of them muſt be divided a ſecond time, that one half of the largeſt may be kept longer than the others, which is to be done by the following method, viz. get a large quantity of moſs well dried, and a number of earthern jars ſufficient to hold the fruit, then place a layer of moſs and another of pears till the jars are full, and ſtop them up with plugs as cloſe as you poſſibly can; which done, cover them with ſand a foot thick or more on every ſide, and let them be opened one by one as they are wanted for uſe: if a few do happen to rot, the moſs will receive their moiſture, and prevent them from injuring the others.

Such as are deſigned to be uſed firſt, after they have been couched, may be laid upon a boarded floor or ſhelves in the fruitery, where they ought to be kept dry by opening the windows in fine days, but in rain or froſty weather, the windows muſt be kept cloſe ſtopt, to prevent the air from having any effect upon the fruit; and if the weather continues ſevere, they muſt be covered with ſtraw and cloths.

The propereſt rooms for fruit are thoſe with the windows on the ſouth ſide, and that can either have a fire in them, or are next to ſome ſtove, or other room where one is commonly kept, which ought to be both in froſty and rainy weather; for if pears are not kept dry, they are apt to rot, and will likewiſe taſte muſty.

Such ſorts of apples as are deſigned for the table, muſt be ordered in every reſpect as pears; but thoſe for baking, &c. may be laid in large heaps, only obſerving to move them ſometimes, and pick out thoſe that are rotten. Walnuts may be preſerved by the ſame means that grapes are, after they are cleanſed from their huſks and rubbed quite dry, as alſo ſmall nuts and filberds, ſaving that theſe two ſorts laſt mentioned need nothing to pack them in but their own huſks.

Quinces may remain upon the trees till the end of October, and are generally uſed ſoon after gathering; but they may be preſerved from rotting till February, if it be deſired, by the method as pears and apples are kept.

Note, If the plugs before mentioned have roſin melted over them, it will cauſe the fruit to keep better; and where there is conveniency of doing it, I would adviſe to have the jars placed in a deep cellar.

Medlars ought not to be gathered till the end of October, and then they have a very auſtre taſte; yet when they are become rotten, are valued by many; and to cauſe their decay, or to bring them to uſe early, they may be laid in wheat bran, made moiſt with fair water, to cauſe a fermentation.

They ought to be laid in a box or tub, with a covering of moiſt bran in the bottom, after that a ſingle layer of fruit, but not to touch each other, and upon them lay a covering of bran an inch thick. After that, five or ſix layers of each may be laid alternately, but there muſt be a covering of bran at the top, and as it becomes drier there muſt be more water poured upon them; by this means they will be in perfection in fourteen days time; but if they be lay'd thin upon dry ſtraw, they will remain ſound for two months. For to keep them the longer in eating, I would adviſe to have three fourths remain dry till others begin to be fit for uſe, then lay a part to ferment as before; and before this laſt parcel is conſumed, thoſe laid dry will begin to decay naturally.

Tho currants are a common fruit, yet they are liked at table, in ſome families, and may be preſerved good upon the trees till November or December, admit they are planted againſt a wall: by only nailing two thickneſſes of garden mats over them in a dry day, when they are ripe, it prevents their withering by the ſun's heat; and if the autumn be dry, a little water given to the roots will be of ſervice.

A
CATALOGUE
OF
FRUITS.

APPLES.

THERE are great variety of apples in England; but I think a few of the beſt kinds, that follow each other in ripening, will be ſufficient to ſerve the whole year, both for deſerts and for the kitchen; and as this ſort of fruit is well known, the different ſize, ſhape, &c. needs no deſcribing.

The Margaret apple is firſt ripe for deſerts; it will bear upon a ſtandard grafted upon a crab-ſtock, or upon a paradiſe ſtock, from which it is earlieſt ripe, and the fruit the largeſt, either againſt a wall, or in any ſort of dwarf; and I think all apples for deſerts are the beſt from dwarf-trees.

Codlins, common, and Kentiſh, are the firſt for the kitchen, and will bear upon their own roots in eſpaliers, or will make ſtandards if grafted upon crab-ſtocks.

The ſummer Scarlet pearmain is a good fruit for either table or kitchen uſe, and will bear on ſtandards.

The golden pippin is good for many uſes, and I think the fruit is much larger and better from a dwarf-tree than a ſtandard. I have heard gentlemen much recommend the ſmalleſt, and thought them to be of a particular kind; but I really think there is but one kind, and the difference that appears in them is only owing to the vigour of the trees or different ſoils they grow in; for I always obſerved that if a tree grew in dry ſoil, and made but little ſhoots, yet bore plentifully, then the fruit was ſmaller, and earlier ripe than thoſe that are larger; but if the large ones come from trees that grow upon land not too wet, then they are as well taſted when ripe as the ſmall ones.

Kirton or crackt pippin, aromatic ruſſet, Drap d'or, Wheeler's ruſſet, Royal ruſſet, French or grey rennet, nonpareil, red calvil, and l'Api, are all the beſt ſorts of apples for the table, and the latter kind will keep while the others ripen on the tree.

The ſummer pearmain, Holland pippin, golden rennet, the hanging apple or ſhort ſtalkt ruſſet, Baffen pippin, royal pearmain, lemon pippin, orange pippin, Bridgewater pippin, Dr. Bernard's apple, partridge apple, ſtone pippin, and winter pearmain, are all good apples for the kitchen uſe, and with codlins will ſerve every day in the year, and make healthy ſtandard trees when gratfed upon crab-ſtocks.

The ſtire, redſtreak and woodcock apple, are all good for cyder, and are proper to plant in fields, by reaſon they are not pleaſant to eat raw.

APRICOTS.

The maſculine is a ſmall round fruit, and is ripe in the beginning or middle of July, but not the beſt bearer, for it bloſſoms early, and they are ſubject to be killed by froſt, except its branches are very well covered at the firſt appearance of the bloſſoms.

The tranſparent is larger than the former, and of a pale yellow, or whitiſh colour, and is ripe in the beginning of Auguſt. The tree is not vigorous, which renders it the fitteſt for an eſpalier or dwarf; but if it is not planted in a proper ſoil, the extremities of the young branches are apt to die in winter.

The Bruſſels is a middle-ſized fruit, pretty full of bright red ſpots on the ſide next the ſun, and ripens in the beginning of Auguſt; the branches of a year old are of a bright brown colour.

The orange apricot is the moſt common, and the beſt bearer; it is a large fruit of a roundiſh make, the ſide next the ſun is markt with red, and it ripens moſt commonly in Auguſt.

The Turkey is the largeſt, tho' ſomewhat flat in its make, without being much markt with red, and ripens ſomewhat later than the laſt, and not ſo good a bearer.

There is a ſmall apricot which ripens with the Turkey; it is of a roundiſh ſhape, and a deep yellow colour both without and within, the fleſh adheres to the ſtone, and the kernel taſtes like a ſweet almond; the tree does not make much wood, neither does it bear very well.

CHERRIES.

The ſmall May cherry, May duke, Kentiſh, Flemiſh, morellas, black and white hearts, are all very common. But there is a late duke much reſembles the May duke in ſize, and colour, but is at leaſt twenty days later before it ripens; it is alſo ſomething longer in ſhape, as alſo the leaves, than thoſe of the former.

The wild black and red cherries are well known in moſt parts of this kingdom. The black corroon, and lukeward, are not much unlike the black and white hearts in colours, but are rounder and not quite ſo large, tho' as well taſted, better bearers, and make healthier trees, for which I think they ought to have the preference.

The amber cherry is of a middle ſize, makes a healthy tree, and bears well; its name tells its colour; the fruit has a pleaſant taſte, and ripens in the middle ſeaſon.

The carnation alſo takes its name from its colour, being red and white; it is a large round fruit, but not of ſo ſweet a taſte as the duke cherry; the tree makes large ſhoots, and leaves that are broad, and much nickt at their edges; it ripens at the latter end of July, but does not bear plentifully, therefore I would not promote the planting of many of them.

The double bloſſomed cherry is more to be admired for the variety of its flowers, than the ſake of its fruit; for it is no better taſted than the Kentiſh cherry and not ſo large, beſides a bad bearer.

The Gaſcoin, or bleeding heart, is a very large cherry, of a long ſhape, and dark red colour; it ripens in July, and has a pleaſant taſte; the tree makes ſtrong ſhoots, and its leaves are very large, and long, and is not one of the worſt bearers.

There is a cherry called Harriſon's duke; I have ſeen the tree, but never the fruit; they make ſtrong ſhoots, with large long leaves, much like that I knew at Belvoir caſtle called the bleeding heart, which is the ſame that bears the name of the Gaſcoin heart at Ragnal in Nottinghamſhire. The owners of each place, at the time they were planted, were both curious in fruit: the one his late Grace the Duke of Rutland, and the other Reſin Melliſh Eſq; And by what deſcription I have had from ſeveral gentlemen of the fruit, it is the ſame cherry as the former; but a fruit of a valuable kind has often many names given it, for undoubtedly it has many admirers, who are apt to call it by the name of the place where they firſt ſaw it, or from the nobleman's or gentleman's name who owned it.

As for inſtance, I have in leſs than four years paſt, near Sleaford in Lincolnſhire, met with a different kind of cherry to any of the former; it is called the Baramdam, which is the name of the place where it grows, in a perfect wild manner, ſo that not any one can give account of their being planted. Mr. Pattiſon the proprietor of the land, and preſent inhabitant, is now about ſixty years of age, who told me their number was greatly increaſed in his time; and he further added, that the ſame land had been the property of his father, and grand-father, both of whom he knew very well, but neither of them was ever able to give him any account of its being planted. And I am by juſt reaſons prompt to ſay, there is no marks of art in any part of the Holt, but they increaſe by ſuckers like black thorns, and bear upon as ſmall buſhes. I have more than once curiouſly examined them; for, ſoon after the time that I firſt ſaw them, I entered into a contract with the right honourable Lord Robert Manners, which engaged me to reſide the greateſt part of my time at Bloxholme, which is no more than five miles from Baramdam. I have got ſome plants of the kind under my care, which thrive well, and bear plentifully; tho' before I ſaw the original Holt, I had been told they would not thrive in any other place; but I find them quite to the contrary, for they will grow and bear upon moiſt ſpungy land, where other cherries will not live long. This I have ſeen near Ancaſter, where I bought ſome young plants, and there was a larger tree in that ground than any one at Baramdam; it was quite healthy and free from moſs, notwithſtanding its roots were in water the greateſt part of the year.

They will root well the firſt year of laying, and I think that the beſt way to propagate them; for the common kinds made uſe for ſtocks are not ſo good, being ſubject to make ſtrong downright roots, whereas theſe are very fibrous, and grow very near the ſurface.

I have propagated the duke cherry upon them, and it is not ſo ſubject to blights as it is upon the wild black or red, tho' it does not make ſo ſtrong ſhoots; but I think 'tis the better for that, for dwarfs or eſpaliers.

The trees upon their own roots never grow to be large ones, and the leaves are ſmall and ſmooth, and are of a bright colour; the young ſhoots are ſmall, much like thoſe of the morella, and bear their fruit like them, the greateſt part of which ripens in Auguſt, and but few in July.

It is a middle ſized round cherry, of a red colour, and its taſte is not quite ſo ſweet as ſome others; tho' it is not a ſour cherry, yet it has ſome little flavour of bitter in it, like the wild black.

Moſt other kinds of cherries are the longeſt lived upon dry ſoils, admit it is not a looſe gravel or ſand; they proſper well upon a ſtrong loam, and the deeper it is before it comes to the cold clay, the better; 'tis bad to have water, ſand or gravel too near the ſurface, but they will thrive very well if there is a looſe creachy ſtone or rock within a foot of the top.

FILBERDS and NUTS.

There are two kinds of filberds, both thin ſhelled; the ſkin upon the kernels of one is red, and the other white, that is the only difference in them, for their taſtes are both alike. As to haſle-nuts there are great variety of them, but the ſorts moſt commonly planted in gardens are the large ones, called the Spaniſh and Lombardy nuts, both have thin ſhells: the cob-nut is very large, but the ſhell is thicker than the former.

FIGS.

Tho' this is a very rich fruit, yet there are not ſo many admirers of it as of others, for which reaſon I ſhall only mention a few ſorts that are the beſt bearers.

Firſt, there are two white ſorts, the one large and rather long in its make, but the ſtalk is ſhort; the other is leſs, and of the ſhape of a button; the pulp of both is white, and ſo is the ſkin, but they are well taſted; and many of their fruit will reſiſt the winter's froſts; and that which puts out in the ſpring ripens well, which makes them good bearers, but both require walls.

There is a middle ſized blue fig, of a ſhort make; it bears well upon the upper ends of the laſt year's ſhoots, and many that appear in autumn will live all winter; it is very thin ſkinned, and the ſeeds are not very large, with a rich pulp of a red colour, which renders it a good fruit; but it requires a wall.

I have ſeen a large fig of a dark purple colour, has a long make, and large leaves more divided than moſt others; it is not a good bearer, without much care; for if it is too full of wood, the young branches are killed in the winter, and that fruit which comes upon the branches of the ſame year ſeldom ripens, but that which does is extremely good; it is called the Genoa fig.

The Verniſingue fig is pretty large, of a brown colour, and round make, pointed a little at the ſtalk; the pulp is very rich, and the ſkin is ſo thin that it generally cracks when ripe; this tree, and the two laſt, require to be matted in the winter, if the autumn fruit is expected to live.

There is a ſmall fig, that has a green ſkin when ripe, tho' the pulp is red; I have ſeen it bear very well on a low ſtandard, or ſort of eſpalier, and is not at all inclinable to grow high, or make long ſhoots.

The minion fig is very ſmall, of a brown colour; the tree is always low, and will bear without the aſſiſtance of a wall.

There is a blue fig of a middle ſize, very red within, but the pulp is not ſo melting as ſome others; yet, as it requires but little trouble, I would adviſe the planting of it, for it will bear, and the fruit will ripen very well without a wall; it is called the dwarf-fig.

I have lately had two kinds recommended to me for extraordinary good ones, but I have not ſeen their fruit; the one is called the Hanover, and the other the Cyprian fig, but what perfections they have I don't know.

GRAPES.

There is no certain time to be fixed for the ripening of grapes, but the earlieſt are called the July grapes: there are the white and black, both ſmall, with large ſeeds in them, and are liable to be eat with flies, if they are not guarded from them with bags of crape, or the like.

The black and white ſweet waters: the berries of both are round, but not of equal ſize; for there are ſome as large as the May cherry, and others, upon the ſame bunch, no bigger than a ſmall corn of ſhot; but thoſe that are large are very good, having a thin ſkin, and full of a pleaſant juice, when ripe: they make very thick ſhoots, but not long ones; and as their leaves are large, their branches ſhould be laid at a great diſtance from one another in the ſummer.

Note, That which is called the white is of an amber colour; the other is black, and its leaves turn red in the autumn.

There is another, called the French ſweet water, or the Arbois grape: it ripens very well; the berries are round, but not ſo large as the former, and of a greener colour; the branches are alſo longer and ſmaller, and the leaves are meally on their under ſides.

The currant cluſter or black Zauth grape. It has a blue powder on the berries, when ripe; they are of a middle ſize, and a little longiſh in their ſhape, being cloſely placed together on the bunches, which are not large. The vine is a good bearer, and the young leaves, before they are full grown, look meally, but after are of a dark green, with an uneven ſurface. It ripens almoſt as ſoon as the July grape, and is far better.

The meally, or millers grape, has round berries of a middle ſize, and cloſely placed to each other on the bunches; they have a thin covering of blue upon them, when full ripe, and the leaves and young ſhoots are of a white or meally colour; they generally ripen very well, and are a tolerable good grape.

The white muſcadine is one of the moſt common grapes, and it bears and ripens as well as moſt. The bunches are of a middle ſize, ſo are the berries, which are of an amber colour when ripe, full of a pleaſant juice, have a thin ſkin, and the kernels are not too large. The vine makes long healthy ſhoots, of a pale brown colour, but not thick; the leaves are of a pale or yellowiſh green, and ſome of them are variegated with white in the autumn.

There is one called the royal muſcadine, which differs from the white muſcadine only in this, that the berries and leaves are of a darker green.

The black Frontiniac. The bunches are long, and the berries thinly hung upon them; and at the time that ſome are ripe and of a dark brown colour, others will be green: the ſhape of both is longiſh. They are a good grape, but have not much of the Frontiniac taſte; the leaves are large, and turn brown in the autumn, ſo do the ſhoots, which are ſtrong and of the ſame colour.

N. B. Theſe kinds of grapes already mentioned will ripen in a good ſeaſon and dry ſoil, either in eſpaliers or ſtandards.

The following ſorts all require walls.

The brick grape is as plentiful a bearer as any I know, and will ripen againſt a wall any year, with proper order: the berries are of a fleſh colour; their ſkin thin, but full of very ſweet juice; they are of a longiſh ſhape, but cloſely placed to each other on the bunches, which are but ſmall, and often grow three of them upon one branch: the ſhoots are long and ſmall, of a pale colour; the leaves, when young, are meally, but in the autumn change to a dark red, variegated with a pale yellow; they are not large, nor much indented on the edges, but have always an uneven ſurface.

The claret grape is well known by its juice, which is ſour, and red as claret; the leaves are large and of the ſame colour.

The black Spaniſh or Alicant grape, has very large bunches, and alſo large berries, of a round ſhape, but a little flat at the end: when ripe they are of a dark brown colour, thinly hung upon the bunches, with ſome quite green amongſt them, but the ripe ones have a pleaſant taſte; the leaves and ſhoots are both large, and of a red colour in the autumn. It is a very good bearer.

The red Hamburgh is an excellent grape, and is ſure to ripen in a good ſummer: the berries are very large, and finely coloured; if they hang their full time, ſome of the bunches will turn black.

The black Hamburgh ripens a little after the red, and has all the good qualities of the other: the leaves are large as well as the ſhoots, and ſhould be nailed no leſs than a foot apart, in the ſummer.

The grape called by ſome the raiſin grape, and by the French Le Sanmoireau: the berries are of a long ſhape, very large, and of a pale brown colour; they have a very long ſtalk, and hang thin upon the bunches, which are pretty large; the fruit eats fleſhy, but has a very pleaſant juice; the leaves are very large, and ſo are the branches, which bear well, if they are laid thin againſt the wall.

The white Frontiniac is a grape of a very ſweet and perfumed taſte: the berries are round, and the greateſt part of them are pretty large, and when full ripe have a fine white duſt on them, and the ſide next the ſun is ſometimes a little ſpotted with brown: this vine bears very well, and the fruit will ripen in ſome ſeaſons without any artificial heat, but earlier with it; the leaves are of a middle ſize, ſo are the branches, which are of a pale colour.

The blue Frontiniac is much like the former, in ripening and taſte, and ſo are ſome of the berries; but there are many ſmall ones upon a bunch, except they are guarded from froſts in the time of bloſſoming.

The grizeled Frontiniac is in ſize like the former, but the colour is yellow, mixed with a dark red or brown. It is higher perfumed than either of the former, but does not ripen ſo well without the aſſiſtance of fire, which would improve any of the eight laſt mentioned ſorts.

The following kinds ſcarcely ever ripen in our climate, without artificial heat, viz.

The Tokay is an admirable grape, when in perfection: its bunches are very large, ſo are the berries, and of a flame colour; their juice has a rich flavour, ſomewhat like the Tokay wine.

The Lombardy is a very large and beautiful grape, finely coloured with pale red on the ſun ſide, and of that circumference that the berries next the wall partake very little of the colour, for want of ſun, and do not ripen ſo well: it is one of the ſhouldered grapes, or ſuch as appear to have three bunches upon one ſtalk, and the ſide bunches are pretty near as large as the bunches of ſeveral kinds: I have known a bunch of this kind weigh ſeven pounds.

The St. Peter's grape. The berries and bunches are of the ſame ſhape and ſize as the laſt mentioned, but of a green colour, and, when made ripe by fire, are covered with a white powder.

MEDLARS.

I am not acquainted with many kinds of this fruit, tho' I have obſerved a variety both in the trees and fruit; for ſome have pricks like thorns upon their branches, and others have none; and ſome ſhoot more vigorouſly than others, with broader leaves; and the fruit of one is much larger than that of another. But I think the tree without pricks upon it, which bears a ſmall ſort, is much better fruit than the other; for it has a much ſmaller core, and the pulp is of a pleaſanter taſte.

MULBERRIES.

I know but two ſorts of mulberries, the common black and the white, whoſe fruit is not of ſo much value, as the leaves are for feeding ſilk-worms. The black is moſt commonly planted in gardens, and bears a very pleaſant fruit for deſerts; beſides, it is uſeful in medicine.

NECTARINES.

Fairchild's Nectarine is the ſmalleſt I know; 'tis of a round ſhape, the ſide next the ſun is of a bright red, and the other of a yellow colour; the pulp and juice of it are not in ſuch great plenty as in ſome others, yet the taſte is pleaſant when gathered from a healthy branch; and it ripens about the middle, or in the latter end of Auguſt.

The Violet nectarine is of a middle ſize, and a purple colour next the ſun, but the other ſide is more pale; the pulp is very red next the ſtone, and has a vinous flavour; it ripens in the latter end of Auguſt and beginning of September.

The Elruge nectarine is not ſo large as ſome others, but it is an admirable good one, and the tree is a good bearer: the fruit is of a purple colour on one ſide, and yellow on the other, but when full ripe it is much ſhrivel'd; the pulp is melting, with plenty of rich juice; and it ripens at the latter end of Auguſt and beginning of September.

The Newington nectarine is both large and beautiful; its colour is almoſt all ſcarlet without, as alſo within near the ſtone, to which the pulp adheres cloſely, and is very melting and full of a pleaſant juice; it ripens in September.

The Roman nectarine is an excellent fruit of a large ſize, and a round make, with a dark colour on the ſide next the ſun, but the other is yellow, and when full ripe it ſhrivels; the pulp is then full of a rich juice, and very red at the ſtone, to which it cloſely adheres; it ripens in September.

Temple's nectarine is of a middle ſize, and a longiſh ſhape; and not of ſo dark a red as ſome others neither without nor within; but the pulp is not inferior to any in taſte: it ripens in the beginning or middle of September.

The Vermaſh, or Peterborough nectarine, is of a middle ſize, round ſhape, and always of a green colour; and tho' 'tis ſo late as October before it ripens, yet if the tree is properly ordered, the pulp is tender and full of a pleaſant juice.

PEACHES proper for a ſmall garden.

There is not a neceſſity of planting ſo many peaches as pears, for the former are not in eating much more than three months, and the latter may be ſo ordered as to be in uſe the whole year.

I don't think it in the leaſt neceſſary to deſcribe all the kinds of peaches I am acquainted with, for there are many not worth any one's obſervation; therefore I ſhall only mention a few that are known to be good, and ſuch kinds as are in eating the whole ſeaſon: and thoſe gentlemen that are deſirous of greater variety may be furniſhed with names in other catalogues; but if they conſult more than one, 'tis poſſible they may find more names than differ in ſorts of fruit; for I have obſerved ſeveral changes in the names of this kind of fruit, within theſe thirty years laſt paſt: ſometimes 'tis done by a perſon's liking the fruit, and not knowing its name, calls it according to his own fancy, and after that recommends the kind, and from thence others are propagated and called by this new name: again, there are ſome that are actually known by two or three names, occaſioned by thoſe who have wrote catalogues of this kind of fruit, one author thinking it not material to mention all the names belonging to one ſort, calls it only by one, and then another deſcribes the ſame fruit by a different name; which cauſes ſome readers to imagine, that there are more ſeparate kinds than there really are.

There are many kinds of early peaches, which are called by the name of Nutmes, Troy, Capuchine, &c. but I think they are only proper for thoſe gentlemen that have a great number of walls; for at the time they are ripe, there are other kinds of fruit in perfection, which much exceed them in goodneſs.

The white Magdalene is the firſt early peach that I recommend. It is a middle ſized fruit, of a round make, with a deep furrow on one ſide; is of a very white colour, except when fully expoſed to the ſun, and then that ſide is ſometimes faintly markt with red. The pulp is very melting, and parts from the ſtone, next which it is ſometimes a little red, and always full of a rich juice. It generally begins to ripen about the middle or latter end of Auguſt.

The Montaban is a middle ſized peach, almoſt round, with a cleft on one ſide, and not pointed: 'tis of a bright red colour, except a little next the wall which is green; the fleſh is melting and well taſted, and is ſometimes red at the ſtone, from which it parts freely; it begins to ripen at the latter end of Auguſt, and will hold in eating near a month: the tree is a good bearer, and makes plenty of healthy branches.

The minion is a tender kind of tree, being very ſubject to the ſmother-flie, unleſs great care is taken; but when the tree is in good order, the fruit is large, and of a bright colour ſo far as it is expoſed to the ſun; the pulp is full of a rich juice, and is very red round the ſtone, which is not large for the ſize of the fruit: it ripens in the latter end of Auguſt, and the greateſt part of September.

The Royal George is not one of the largeſt peaches, but the tree is generally a good bearer; the fruit is of a round make, and no ſort of nipple at the upper end; it has a cleft on one ſide, and flat at the ſtalk ſo far as it is expoſed to the ſun; the ſkin is of a deep red with a down upon it, and the other part is white and full of ſmall red ſpecks; the fleſh is melting, and very red near the ſtone. It ripens in the beginning of September.

Smith's early Newington is a middle ſized peach, of a roundiſh make, and a fine red next the ſun, with a ſoft down upon it, but the other ſide is of a pale green; the fleſh eats firm, and its juice is very pleaſant, and the ſtone is red. It ripens at the latter end of Auguſt, and beginning of September.

The Nobleſs is a large peach almoſt round, and marbled on the ſide next the ſun with a dark red or purple colour, but the other ſide is of a pale green; the pulp is very melting, of a greeniſh colour, is full of a pleaſant juice, and comes clean from the ſtone. It ripens in the beginning of September.

The Violet peach is a large fruit, and not inferior to any in goodneſs, for the pulp is quite melting and full of an extraordinary pleaſant juice; 'tis of an oval ſhape, and the ſide next the ſun of a purple colour, with a little down upon it. It ripens at the latter end of September.

The Admirable, ſo called from its ſize and beauty, for it is very large and of a round ſhape, finely coloured with red on the ſide towards the ſun; the fleſh parts from the ſtone, and is of a purple colour; and though 'tis not ſo ſoft as ſome others, yet it has great plenty of juice that is well taſted. It ripens in the latter end of September.

The Portugal peach is of a large ſize and a round ſhape; the ſide next the ſun is finely coloured with red, and has a ſoft down upon it; the ſhape is even and almoſt round; its pulp is not ſo much melting as ſome others, but the juice is pleaſant; and the fleſh is red at the ſtone, to which it cloſely adheres. It is a healthy tree, and the fruit ripens late in September.

The royal peach, or pavie royal, is one of the larger ſort, and of a handſome round make; the colour is almoſt all red, but paler next the wall than it is next the ſun; the fleſh parts from the ſtone and is of a red colour round it, and full of a rich juice; it ripens at the latter end of September; and the tree muſt be carefully obſerved and watered with a proper mixture, or elſe it will be blighted, if the ſoil is not very ſuitable.

The Italian peach is a middle ſized fruit, of a longiſh make, and dark red colour on the ſide next the ſun; the fleſh is melting and full of a pleaſant juice, it is red next the ſtone, and ripens at the latter end of September; and the tree is a good bearer.

The Chancellor's peach is a middle-ſized fruit, of a bright red colour covered with down; the pulp is yellow, except near the ſtone, where it is red, and full of a pleaſant juice. It ripens at the latter end of September, and the tree bears very plentifully.

The Purpree, or purple peach, is a large fruit, of a dark red or ſort of purple colour;

lour; the fleſh is yellow and melting, with plenty of pleaſant juice; it parts from the ſtone where it is red; and ripens at the latter end of September.

Teton de Venus, or the breaſt of Venus, ſo called from its being ſhaped like a woman's breaſt, being deeply clefted on one ſide, without a ſharp point at the end, but is plump and round on each ſide the cleft; the fruit is ſomewhat longiſh, and has a little red on the ſide next the ſun; but the fleſh is white, and full of a pleaſant juice; and it ripens at the latter end of September.

The Old Newington is known and admired by many; 'tis one of the largeſt ſort, and has a handſome round ſhape; the ſide next the ſun is of a beautiful red, and ſo is the fleſh next the ſtone; and when the fruit is perfectly ripe, none has a pleaſanter juice, nor in greater quantity; and the pulp is of a fine yellow colour next the ſkin, it is melting and not too ſoft; and ripens in the beginning of October.

This trec ought to be left very thin of wood, at the time of winter-pruning.

The Rombullion is a pretty large peach, of a fine red colour next the ſun, with a deep furrow on one ſide, and rather longiſh in ſhape; it is very red at the ſtone, from which it parts; it is melting, and the juice is well taſted for a late peach, for it does not ripen till October: the tree bears well, but the branches ſhould be kept thin.

The Cambray is a middle-ſized peach, ſomewhat longiſh in its make, but not much red, tho' the pulp is melting, and has plenty of juice for a late peach. It ripens in October; and the tree is healthy, and a good bearer.

The Perſique, or the late Admirable, is a very large peach, of a roundiſh make, with a little nipple at top; it is red next the ſun, but the other ſide is of a pale green; the fleſh parts from the ſtone, next which it is of a pale red; it ripens in October, and if the ſeaſon is dry and warm, the fruit is very good; but the young branches ſhould be at a great diſtance from one another, or elſe the fruit is apt to rot: the tree is healthy, and bears plentifully.

The Catherine peach is a fine large fruit, of a round make, and of a beautiful red colour on the ſide next the ſun, but the other is white; the juice has a pleaſant taſte, and the pulp is improved by lying three or four days before it is eat; it does not part from the ſtone, but is very red; it ripens in October; and ſome of them will continue a conſiderable time without rotting, if the ſeaſon is fine, and if neither the branches nor fruit be left in too great a quantity, for the tree is a plentiful bearer.

There has been a peach lately recommended to me by the name of the Hamſkirt, but I am not acquainted with the fruit, nor do I know the time of its ripening.

QUINCES.

There are many kinds; but the only ſort that I would chuſe to plant is one of the make of the Buree pear, and about as large; the tree is healthy and of a larger ſize than others, and bears plentifully moſt years. It is called the Portugal quince.

PEARS.

The earlieſt pear that I know of any value is the Petit muſcat; it ripens moſt commonly in July, tho' I have known it ſome years ripe at Midſummer againſt a ſouth wall; it is but a ſmall pear, ſomewhat long in its make, of a yellow colour, except on the ſide next the ſun, which is of a dark red; it has an agreeable taſte, ſomewhat perfumed, and if the tree is kept in good order, the fruit eats moiſt, but if the tree is too full of old wood, then the fruit is not good.

I never have ſeen it grow upon ſtandard-trees, but have known it to do extremely well and bear plentifully upon wall-trees, eſpaliers and dwarfs. As this pear ripens ſo early, it will do extremely well againſt a north-eaſt or north-weſt aſpect, for in June both theſe walls receive ſeveral hours ſun.

The muſcat Robert is ſometimes called the Queen's pear, or the amber pear, from its yellow colour. It begins to ripen not more than a week later than the former;

it is ſomewhat larger and rather rounder in its make, has a longer ſtalk, and bears in cluſters: it has a very pleaſant flavour, without being either harſh or meally.

The young ſhoots are of a yellow colour, and as they are long and weak, require to be ſupported either by nailing to a wall or in an eſpalier, or confined to ſtakes either concave or horizontally: it does not require any better aſpect than the former; but in a garden where there is room, I would chuſe to have one againſt a wall, and another in ſome kind of dwarf, that they may be the longer eatable.

The Citron de Camus, is a middle-ſized pear, more long than round, but not ſharp pointed; it is of a pale green or yellow colour, and ſometimes faintly ſtained with red on the ſide towards the ſun; it has a longiſh ſtalk, and bears plentifully in large cluſters; it has a very agreeable juice, and its fleſh is tender; it ripens at the end of July, and beginning of Auguſt: and as this tree makes ſtiff healthy ſhoots, it will do extremely well in a ſtandard, with proper cutting, admit it is propagated on a free ſtock; but the fruit does not ripen ſo early as thoſe againſt walls, or upon dwarfs, and if it be in both ſhapes in one ground, the fruit will be the longer in eating.

The Magdalene, or St. James's, takes its name from the time of its being ripe. It is a green pear, but turns rather yellow in ripening: 'tis of the ſmaller ſort, but very good, being full of a rich juice; and will bear either in a ſtandard or any other ſhape, and makes a very healthy tree.

The green Chiſel is a middle-ſized pear, ſomewhat longiſh, and rather ſharp pointed towards the ſtalk; it always remains green, and is very full of juice, but I don't think it has ſo briſk a taſte as ſome others: I never ſaw it bear on a ſtandard, but it makes a healthy tree, and bears well againſt a wall, or in any kind of dwarf; and ripens in the beginning of Auguſt.

La Brute-bonne, or the brute pear, takes its name from the fleſh near the core, being coarſe and gritty; yet it has many perfections belonging to it, and may juſtly be ranked amongſt the beſt ſorts of ſummer pears, for the greateſt part of its fleſh is melting, and full of a vinous juice, which is perfumed, but not too highly.

'Tis of a pale green colour, and the ſide next the ſun is faintly markt with red; it is much about the ſize of an autumn Bergamot, but not of ſo flat a make, and tho' it is a roundiſh pear, yet it is a little pointed at both ends, and has but a very ſhort ſtalk. Part of them will be ripe about the middle of Auguſt, but 'tis beſt to gather them ſome time before, otherwiſe the greateſt part of them will be deſtroyed by ſmall birds, waſps, and flies. It will bear in any ſhape and makes a ſtrong healthy tree, if trained up for a ſtandard; its leaves are longiſh, and of a dark green on the upper ſide, but their under ſides are meally.

The Jargonelle, is a middle-ſized pear, of a long ſhape, with a large eye or dew-bit; it is very ſmall towards the ſtalk, which is long; its ſide next the ſun is generally of a dark red or brown colour, but the other ſide, when ripe, is of a bright yellow. They begin to ripen about the middle or end of Auguſt, and are extremely good, being full of a very pleaſant juice; but are liable to be deſtroyed by waſps, and flies, if they are not gathereed at their firſt beginning to turn yellow.

The tree makes long crooked ſhoots, that are ſubject to canker; for which reaſon I think 'tis the fitteſt for walls or dwarfs, and kept with proper cutting.

There are two Blanquet, or blanket pears, the great, and the ſmall, but the latter I eſteem the beſt; it is ſometimes called the pearl pear; it ripens about the end of Auguſt, and is admirably good, being quite melting, and full of a rich juice. It is but a ſmall pear, of a longiſh ſhape, and quite yellow; it bears its fruit in cluſters, and in great plenty, but its ſhoots are very weak, and not proper for a ſtandard-tree.

The ſummer Bergamy differs but little from that valuable and well known pear the autumn Bergamy; the former has moſt of the perfections of the latter, but is of a green colour, and its time of ripening is earlier, being about the end of Auguſt; it is a healthy ſtrong tree, and will bear upon a ſtandard.

Of the roſe pears there are two ſorts both extremely good; the one is called the curled roſe pear, or the roſe water pear, for its juice (of which it is very full) taſtes like it, and if the tree be in good health, the fleſh of the fruit is quite melting; it has a very ſhort ſtalk, and bears in cluſters, either on ſtandards or otherwiſe; the leaves are large, round, and of a yellowiſh colour; the fruit has ſome ſmall appearance of a purple colour on the ſide next the ſun, but the other parts, when ripe, are of a pale yellow, and full of ruſſet ſpots: it is a middle ſized pear, more long than round, and thick at the end next the ſtalk, but not pointed; it is in eating at the end of Auguſt, and beginning of September.

The other roſe pear has a long ſtalk, very ſmall, and is of a flatter ſhape than the autumn Bergamot, and ſomewhat larger; 'tis of a dark brown colour on the ſide next the ſun, but turns yellow on the other ſide when it becomes ripe: its fleſh is not ſo tender as the other, but the juice is as rich, of which it is very full, and begins to ripen early in September. The birds, waſps, and flies, are very fond of this, as well as ſeveral others before mentioned;

tioned; for which reaſon, it ought to be gathered and kept out of their way. It is a weak ſhooting tree, and not proper for a ſtandard.

There are two ſorts of the orange Bergamies, both very much alike in ſhape and ſize; but the one is green, and the other is yellow, with a faint red on the ſide next the ſun; it is ſometimes called the royal orange Bergamy. I think it the beſt; tho' it has not ſo high a perfume as the other, yet 'tis as full of juice, and of a much briſker taſte. The fleſh of both are breaking, and their ſhapes are ſomewhat round, but hollow round the eye, and a little pointed at the ſtalk, which is ſhort. They ripen in the beginning of September, and bear plentifully in any ſort of dwarf, but don't make healthy ſtandards, for their branches are ſubject to canker; they are about as big as the autumn Bergamy, and have an uneven ſurface.

The pear called the Robin, has many other names, viz. the Auguſt, Muſcat, Averat, Hanvelle, Royal, or the French King's favourite pear. It ripens about the middle of September, and is of a roundiſh make, but narrow towards the ſtalk, and full at the eye; 'tis leſs than the orange Bergamy, but its fleſh is breaking like them, and its juice is very highly perfumed; it bears in large cluſters, and in great plenty, either againſt a wall or on dwarfs, but I never ſaw it a ſtandard, tho' I think it would bear with proper cutting, &c. for it makes ſtrong healthy ſhoots.

The Salveati is a middle-ſized pear, almoſt round, being much ſwelled in the middle, and but little pointed towards the ſtalk; it is of a beautiful yellow colour on the under ſide, but that next the ſun is ſomewhat red: its juice is extremely ſweet, and the fleſh tender. The waſps and flies are very fond of it. About the middle of September it generally ripens, but if it is gathered a little before, it will not eat worſe for it. It bears well againſt a wall, or on any ſort of dwarf, and alſo on a ſtandard properly ordered.

The Caſſolet, or green Muſcat, ſo called from its colour and taſte. It is but a ſmall pear, of a long ſhape, but thickiſh at the end next the ſtalk; and tho' 'tis green, yet there are ſome ſpecks in the ſkin like thoſe of golden pippins: it has a hard breaking fleſh, but full of juice, which is very rich and perfumed. It ripens at the latter end of September, and makes a very healthy tree; it bears well on dwarfs, but I never ſaw it grow a ſtandard.

The muſked Bon chretien is a middle ſized pear, of a yellow colour, with a large eye, ſomewhat round in its make, but narrow towards the ſtalk, which is long and ſmall; it has a hard fleſh, but the juice is very pleaſant, and is in eating from the middle of September to the end: its leaves are very much like thoſe of the winter Bon chretien, ſo are its ſhoots, but they are very ſubject to canker, and for that reaſon it is not proper for a ſtandard: it is beſt againſt a wall, but does not require a ſouth aſpect, for either north-eaſt or north-weſt will afford it ſun enough.

The ſummer Bon chretien, or good chriſtian, is a large pear of a fine yellow colour, and faintly covered with a dark red or brown on the ſide next the ſun; it is of a very long make, and ſmall next the ſtalk, which is of a great length, like the other Bon chretiens, as is alſo the core, for 'tis the laſt part that decays, and for this quality of being ſound at the heart 'tis called the good chriſtian. The fleſh is tender and full of a rich juice: it holds in eating from the middle of September to the end. It bears well againſt a wall, admit the horizontals are placed a foot or more aſunder; and their collateral ſhoots ſhould be kept the whole length, for it bears ſometimes upon thoſe of the laſt year's production, eſpecially when 'tis propagated on a quince ſtock; but care muſt be taken to keep the branches from cankering, by taking away the dead parts of the rind as ſoon as perceived.

La Poire de mon Dieu (as called by Monſieur Merlet) is a very large fruit (if the tree is in good order) of a yellow colour, and on the ſide next the ſun of a beautiful red; the ſhape is ſomewhat long, and thick at the ſtalk, which is long, but not ſmall; the fleſh is tender and very full of a rich juice, which has ſomething of a perfumed taſte. They ripen upon the tree in September and October, and I have known them hold in eating for more than twenty days from one tree. The young branches are generally ſtiff, and of a dark red, or brown colour; they bear well either againſt a wall, or in dwarfs, but I have not ſeen them ſtandards.

The Doyenne, or the deans pear, has many other names, (viz.) The white or ſhort ſtalkt buree, the ſnow pear, the Michaelmas Pear, &c. it is of the largeſt ſort, ſomewhat longiſh, but not pointed; the fleſh is melting, and full of a pleaſant juice; it ripens in October, and is as good a pear as any of that ſeaſon.

The autumn Bergamot is a pear well known, ſo that it needs not to be deſcribed; and as it will bear either againſt a wall or on a ſtandard, I ſhould therefore chuſe to have a tree or two of them planted both ways; by which means they will be in eating from the end of September to the middle of November; and it is ſo good a fruit, I think it can't be too long in ſeaſon.

The red Buree has many other names, as the Amboiſe, and the Iſambert, &c. it is a melting pear, and full of a very rich juice; and if the tree is in good order, the fruit is large, and long: they are ripe in October, and don't keep much longer; and if the tree grows in ſoil too moiſt, the ſhoots are apt to canker. The horizontals ſhould be at leaſt a foot from each other; for the collaterals that bear are generally pretty long. This tree is much more proper for a wall than a ſtandard.

The grey or brown Buree, or butter pear, is of different ſizes, colours, and taſtes, according to the different ſoils or aſpects it grows in, which ſometimes occaſions it to have different names: but it is a contrary pear to either of the Burees mentioned before.

If the grey Buree be upon a free ſtock, in a moiſt ſoil, a northern aſpect, and a wet ſummer, then the fruit will be of a pale green colour, without any red upon it, and but little brown; and tho' it may grow to a large ſize, yet the taſte will be inſipid: for which reaſon I think 'tis beſt to give this tree as much ſun as poſſible, and then the fruit will be of a red colour next the ſun, and the other parts will be brown, but in ripening turns more yellow, and its melting pulp will be full of a very vinous juice; and when in perfection it is a large fruit, of a ſhape more long than round, but not much pointed: 'tis in eating part of three months (viz.) October, November, and December; the wood of this tree is of a red colour, and if not kept in good order, is liable to canker. It will do either in eſpaliers or other dwarfs; but I don't think it proper for a ſtandard.

There are two ſorts of the Monſieur John, both alike in ſhape, but the one is brown, and the other more yellow, which is much the beſt, and is called the gilded or golden Monſieur John; it ripens in November, but the other not till January: they are both of a middle ſize, and round make, tho' pointed a little towards the ſtalk; their fleſh is hard, and they have a hard core, but their juice is extremely ſweet: the trees bear well, are healthy, and have round leaves.

The Criſan is a large pear, in ſhape ſomewhat like the autumn Bergamot, but much larger, with a very long ſtalk, and of a pale green or yellow colour, ſpotted with brown. Its fleſh is quite melting, and full of vinous juice, much like that of the autumn Bergamot. It is in eating from the end of October to the middle of December.

The tree makes healthy ſhoots of a pale colour; it bears plentifully againſt a wall or dwarf, but I can't recommend it for a ſtandard.

L' Epine d'Hiver, or winter thorn, is a middle-ſized pear, of a long make, but not pointed, being thickiſh at the ſtalk, which is long and ſmall; it is of a green colour upon the tree, but turns yellow in ripening, in the months of November and December; its fleſh is melting, and very full of juice which is highly perfumed; the tree bears well againſt a wall, but I have not ſeen it a ſtandard.

The Swan's egg is but a middle-ſized pear, in ſhape like an egg, and has but a ſhort ſtalk; it is of a green colour, thinly covered with brown; its fleſh is melting and full of a pleaſant juice; and is ripe in November and December. The tree is healthy, and bears well either on a ſtandard or any other way.

Le Bezy de Queſſoy, or little winter Buree, is a ſmall ruſſet pear, a little pointed towards the ſtalk; its fleſh is melting, and full of as rich a juice as any pear in the ſeaſon: it is in eating from the beginning of December to the middle of January; the tree bears well on a ſtandard, the fruit grows in cluſters, and the young branches are ſometimes a little thorny.

The St. Germain is a large long pear, pointed at the ſtalk, which is of a middle ſize: the colour of this fruit, when gathered, is green, with a little brown ſometimes on the ſide next the ſun, but turns yellow in ripening; its fleſh is the greateſt part of it melting, and full of a pleaſant juice that is a little perfumed; it generally has a large core; and when the tree is not in good order, or too full of fruit, it will be ſmall, and the fleſh gritty, and of an inſipid taſte: they are in eating from the latter end of November till the middle of January. With proper order the tree makes plenty of ſhoots, and bears well againſt a wall, or on a dwarf, but I don't think the fruit ſo good on a ſtandard.

I obſerve that when this tree is upon a free ſtock, it then requires a great ſpace of wall; and if upon a quince, it ought to have its wood often renewed, for the fruit produced from old ſtuds is apt to be ſmall, and the fleſh ſtony.

La Echaſſerie is a middle-ſized pear, of an oval ſhape, with a long ſtalk, and bears in cluſters; it is green upon the tree, and the ſide next the ſun is a little brown, but it turns yellower in ripening, which is in December: the fleſh is melting, and the juice well taſted, but it does not hold ſo long in eating as ſome others. This tree is not fit for a ſtandard, neither is the fruit good againſt a north wall, but it generally bears plentifully, with proper order, either againſt a weſt, eaſt, or ſouth wall, and likewiſe on a dwarf or eſpalier.

The Ambrette is a ſmall pear, of a round ſhape, and a dark brown colour on the ſide next the ſun; but the other is more green, and changes yellow in ripening, which is in December and January: the fleſh is quite melting, and full of ſweet perfumed juice; the fruit grows in cluſters and in great plenty, if the tree be in good order, either againſt a wall, or in any kind of dwarf, but it is not fit for a ſtandard, becauſe it makes but weak ſhoots: the leaves are long and narrow, and the wood is thorny.

The Marquis is a large pear, of a long make; ſome of them are pointed at the ſtalk, and ſome are not; it is of a green colour, with a little brown upon it; it ripens in December and January; its fleſh is quite melting, and full of an extraordinary rich juice; I think it may be deemed the beſt pear of the ſeaſon; it bears well any way, except on a ſtandard, makes long ſhoots, and the young buds are large and of a black colour.

The Virgoleuſe, or Virgolee, is a large pear, being both long and thick, without a narrow point at the ſtalk, which is thick likewiſe, but not very long: this pear, when growing, is of a dark green colour, and ſometimes the ſide next the ſun will be a little changed to a dark red, or brown-colour, but in ripening turns yellow, and generally ſhrivels very much; the fleſh is melting, but rather firmer than ſome others; its juice is in great plenty, and of the richeſt ſort, admit the place on which the fruit has been laid has not ſpoiled it, for this fruit is apt to have a taſte of what it is laid upon to ripen: it is fit for eating in part of December and January, and the beginning of

February; the tree grows vigorouſly, with leaves of a dark green, but is not fit for a ſtandard, tho' it well deſerves a wall that has a good aſpect: it muſt be kept with good pruning; for if the bearing wood be too old, the fruit will crack and fall off.

The Colmar is a large green pear, thick at both ends; its fleſh is tender, but not the moſt melting, though full of extremely rich juice: it is the beſt pear in the ſeaſon for its long continuance in eating, which is all January, February, and part of March. I chuſe to have it upon a free ſtock, on which the fleſh will be tenderer than on a quince, but I don't like it for a ſtandard: let it have a great ſpace of wall, and then it will produce a large quantity of good fruit; and I think in every garden there ought to be more trees of this than any other ſort, becauſe there are none ſo good as it, in the ſame ſeaſon.

The great Winter-rouſſelet is a middle-ſized pear, of a longiſh make, of a red colour next the ſun, but green towards the wall, and turns yellow in ripening, which is in February and March; its juice is agreeable, but is not in ſuch plenty as in many others; the tree is healthy, the ſhoots are red, and the leaves are of a bright colour.

The-Martin ſeck is not one of the beſt pears; but as it is in eating when good ones are ſcarce, it is the more acceptable: it is a long fruit, of a middle ſize; the colour, when ripe, is yellow and a dark red; the fleſh is of a firm nature, but its juice has an agreeable ſweetneſs in it; it may be eaten in the months of February, March, and part of April, but it is much better when ſtewed or baked: the tree is healthy, and bears plentifully, tho' not fit for a ſtandard.

The Eaſter Bergamot is a round pear, of a middle ſize and a green colour; the fleſh is of the melting ſort, and if it is ſo planted as to have much ſun, then its juice is of the beſt ſort; but when planted againſt a north wall, then its qualities are quite contrary: it is in eating in March and April, but I don't recommend this tree for a ſtandard.

The Winter Bon Chretien is by ſome people divided into two or three ſorts, viz. one called green, one yellow, and another di-

diſtinguiſhed from them by its being of a different ſhape. I have had the opportunity of obſerving this fruit for more than thirty years, and really think there is but one kind; for I have obſerved the fruit of one tree to anſwer to the ſeveral deſcriptions given of all the pretended ſorts; by which I think the difference of colours proceeds from ſome of the fruit being expoſed to the ſun, and others quite ſhaded from it; and the difference of ſize and ſhapes, from the different ſtates of health the trees or branches are in which produce the fruit; or from the like cauſes it comes to paſs, that the fleſh and juices of the fruit are altered. I chuſe to have them planted either upon a ſouth, ſouth-eaſt, or ſouth-weſt aſpect, and the border of a proper ſoil; then, if the tree is in good order, the fruit will moſt of them be large, and of a bottle ſhape, and the ſide next the ſun a dark red; the fleſh tender, tho' not melting, and there will be a tolerable quantity of delicious juice in March, April, and a great part of May, which is the time of its perfection, when it will be changed to a yellow colour, and have an uneven ſurface.

This tree ſhould have a large ſpace of wall allowed it, and its horizontals laid at leaſt a foot aſunder. When this fruit grows upon a north aſpect, and the tree too full of old moſſy wood, and the ſtuds and bearers at a great diſtance from the wall, then great part of the fruit will be ſmall and green, and the fleſh ſtony, with a ſmall quantity of inſipid juice.

The Chaumontel is of a large ſize, long, and ſmall towards the ſtalk; the ſide next the ſun is red, but when ripe, yellow; the fleſh is of a melting ſort, and the juice pleaſant: it keeps rather longer than the Bon Chretien, makes a healthy tree with red ſhoots, is a good bearer, but neither proper for a ſtandard nor north wall.

Good BAKING-PEARS proper for ſtandards or north-walls.

The Beſi d' Hery has a round ſhape and middle ſize, with a taſte of fennel, when baked.

Parkinſon's Warding is a long pear, of dark green, brown, and red colours, with long narrow leaves of a deep but ſhining green colour.

The Black pear of Worceſter is a large pear, pointed at the ſtalk, is of a dirty brown colour, and does beſt againſt a wall.

The Cadilliac is a very large pear, of a round make, with a green ſkin, except on the ſide next the ſun, which is a little red.

The Bell, or Prince's pear, is very large, of a deep red colour, and ſhaped like a bell: it does beſt when ſupported by a wall.

The ſoil that I ſhould recommend for theſe baking pears, is a deep black ſand, or dry loam.

PLUMS.

The earlieſt plum that I know does not require much trouble in its cultivation, for it will bear plentifully on a ſtandard, and is generally planted among flowering-trees, for the ſake of its beautiful bloſſoms, which appear early in the ſpring: it is called the cherry plum, and indeed it ſomewhat reſembles a cherry in its ſhape and ſize, as alſo in colour, being red; its pulp parts from the ſtone, and the taſte is not diſagreeable; but I imagine would be improved by planting againſt a wall.

The Jean Hative plum, is a middle-ſized fruit, of a yellow colour, covered with a white powder; it has the ſhape of an egg, and not flat; the fleſh eats firm, and parts from the ſtone, which is long; its taſte is tolerably good, if the tree be in health, and not ſuffered to bear too great a quantity. This plum ripens in the beginning or middle of July, and tho' it is not one of the beſt, yet I recommend it for its early ripening, and would adviſe to have it planted upon a north-eaſt aſpect.

The Precoce de Tours, is a large round plum of a violet colour, finely powdered; its pulp is yellow, and parts from the ſtone, and is full of a delicious juice; and it ripens at the end of July. This tree makes vigorous ſhoots, of a reddiſh colour, with a white down upon them; the leaves are round and of a dark green. It bears plentifully againſt a wall, or in an eſpalier; but I don't know how it would do in a ſtandard.

The Italian damaſk is a middle-ſized plum, of a roundiſh ſhape, and black colour, but finely covered with a blue powder; its pulp, which is yellow, is full of a rich juice, and parts from the ſtone; it ripens in the beginning of Auguſt; but I have not ſeen it bear on a ſtandard.

Drap d'or, is alſo called the cloth of gold plum: it is of a yellow colour, and the ſide next the ſun is ſpotted with dark red; it is a ſmall plum, ſomewhat long in ſhape, but neither flat, nor pointed; it has a remarkable dimple on each end, and the ſtalk is ſhort; the pulp is of a yellow colour, and does not eaſily part from the ſtone, but is extremely full of a vinous juice; it ripens about the middle of Auguſt, and bears plentifully againſt a wall, or on an eſpalier; but I am not acquainted with it in ſtandards.

La Royale, or the royal plum, is a large round fruit, having but very little furrow or cleft on the ſide; it is of a dark red colour on the ſide next the ſun, but pale on the other, and much powdered; it is full of an extraordinary pleaſant juice; the fleſh is firm, and of a pale yellow colour, and comes clean from the ſtone, which is longiſh and ſmall for ſo large a plum. I deem it the beſt I know, for there are none of its ſize equal to it in goodneſs, and but few that are ſmaller excel it: when properly ripe, it will then ſhrivel on the ſide next the ſun, and if it is preſerved from waſps and flies, will dry upon the tree to be exceeding good at the end of Auguſt, or the beginning of September, if it is againſt a ſouth wall, but on others it is later. I have ſeen young ſtandard-trees of it, but I can't recommend the practice, for they are uncertain of bearing; and when they do, the fruit is neither large nor good, beſides very liable to be beat down by the winds: but I have gathered good fruit from eſpaliers. The leaves of this tree are large, but not much pointed: it does not grow vigorouſly, and tho' it will make ſome long ſhoots, yet they are generally weak, and of but ſhort duration; for which reaſon the horizontals ought to be often renewed: and as it bloſſoms early, I adviſe to have it covered with green branches as ſoon as the bloſſom begins to open. I have by that means procured a large crop of fruit, when others of the ſame kind had but little, tho' both againſt the ſame aſpect.

N.B. I knew a gentleman, who had a plum tree ſent him by the name of the Matchleſs, which proved no other than the La Royale; and for ought I know they are both the ſame.

The Fotheringhay plum is a very large fruit of a red colour, and ſlightly powdered; it is ſhaped like an egg, with a deep clift on the ſide; the fleſh, which is white, parts freely from the ſtone, which is long; the juice has a ſweet taſte, but not agreeable to many palates, nevertheleſs 'tis a good plum to dry. It ripens at the end of Auguſt, and beginning of September; the tree is healthy, and bears plentifully; but I have obſerved the fruit bad, and drop from ſtandards before it was full grown; for which reaſon I would adviſe thoſe who like this fruit, to plant it either againſt a wall or in an eſpalier; but I don't think it deſerves one of the beſt aſpects.

The Orleans is a very common plum, yet I have known others taken for it, for which reaſon I think it can't be amiſs to deſcribe it. It is a middle ſized round fruit, ſomewhat hollowed about the ſtalk, which is ſhort; 'tis of a pale red colour and powdered with blue, the pulp is of a pale yellow, or whitiſh colour; it eats firm, and leaves the ſtone dry; the juice has ſomething of an acid taſte; and it is deemed a good plum to dry.

It ripens at the ſame time as the La Royale; the tree makes vigorous ſhoots of a greeniſh colour, and the leaves are large: I have ſeen plenty of good fruit upon a ſtandard that was kept with proper cutting; but when there is too large a quantity ſet, they ſhould be thinned according to the rules laid down for wall-trees, or elſe the greateſt part of them will be bad.

The blue Perdrigon is of a purple colour when full ripe, and ſtrongly covered with a pale blue powder. It is but a ſmall fruit, and a little pointed towards the ſtalk, which is ſhort; it ripens in the beginning of September, and is an excellent fruit for its ſize. The pulp is of a pale yellow colour, parts freely from the ſtone, eats firm, and is full of a delicious juice, and when it dries upon the tree, has much the taſte of a good raiſin. It makes a healthy tree, but not a good bearer without more than common care; for it bloſſoms early, and requires to be ſheltered, if the weather is froſty; admit it be either againſt a wall or in an eſpalier, then it will do tolerably well, if the horizontals are often renewed; but I never ſaw it bear on a ſtandard.

The white Perdrigon is in ſhape much like the former, but ſomewhat larger, and ripens alſo about the ſame time. It is of a pale yellow colour, but covered with a white powder; the pulp is of a pale green, full of a ſweet juice, and leaves the ſtone dry, which is very ſmall. Tho' this plum is not ſo good as the blue, yet it is a better bearer, and drys well, and is worthy of a wall, but I never ſaw it a ſtandard.

Of the Queen mother plums, I know two ſorts, the white, and the red; they are both alike in ſhape and ſize, that is, round, and ſmall, with ſhort ſtalks; and ripen at the beginning of September; the pulp of both is of a fine yellow colour, full of a pleaſant juice, and adheres to the ſtone. The young branches are of a brown colour, and very ſmooth; the collaterals are very ſmall, ſo are the leaves; but with proper order they will bear on ſtandards. The firſt of theſe plums is of a pale red colour, and the other of a bright yellow, with a bluſh of red, and both thinly powdered.

The green Gauge is a plum much admired, and there is great reaſon for it, for many excellencies belong to it, and that particularly of its being a plentiful bearer. Moſt people imagine they know it; but as I have ſeen many deceived, I think it will be proper to deſcribe it, as alſo thoſe which cauſe the miſtake.

It is a middle-ſized fruit of a round ſhape, with a very ſmall furrow on the ſide; the ſtalk is ſhort and thick: 'Tis of an olive colour, and, when properly ripe, the ſide fully expoſed to the ſun is a fine purple covered thinly with a blewiſh powder; the pulp is of a beautiful yellow colour, and full of an extraordinary pleaſant juice, but does not come freely from the ſtone; it ripens in the end of Auguſt and beginning of September. The tree makes ſtrong healthy ſhoots of a dark brown colour, without any or powder upon them. The leaves are large, and of a bright green colour. I have ſeen it bear good fruit on a ſtandard with proper cutting, and likewiſe in all other ſhapes.

N. B. A tree of this kind was ſent from France, by the right honourable the Earl of Stair, to his Grace the ſecond Duke of Rutland, by the name of the green Spaniſh plum.

There is a green plum taken for the green Gauge, which is not like it, if duly obſerved, except in part of its colour. I have heard it called the green oſtridge; it is about the ſize of the green Gauge, but longer, and when full ripe more yellow, without any purple upon it, and its juice has quite an inſipid taſte; the pulp is yellow, and ſticks cloſe to the ſtone, and it ripens rather earlier than the green Gauge, but without any of its perfections; the ſize and ſhape of their leaves are nearly alike, ſo is their colour, but the young ſhoots are ſomewhat greener than thoſe of the former.

The Maitre Claude is a middle ſized plum, of a round ſhape, but rather narrow at the upper end, with a furrow on the ſide, and a ſhort ſtalk. Before it is fully ripe I have known it taken for the green Gauge; tho', if carefully obſerved, there is much difference in the leaves and ſhoots.

This tree makes ſhoots long and ſmall, of a bluiſh colour, and covered with a white down; the leaves are of a dark green, and not ſo ſhining as the other. It is ripe in the beginning of September, and of a bright yellow colour; the ſide next the ſun has ſome ſmall marks of a bright red upon it, and is thinly covered all over with a white powder. The pulp is of a pale yellow, leaves the ſtone freely, and eats firm; the juice is pleaſant, but not ſo plentiful as in ſome others. The tree bears plentifully againſt a wall or in eſpaliers, but I have not ſeen it in any other ſhape.

The Verdock is ſometimes taken for the green Gauge, tho' it is ſomewhat larger and longer, with a ſmall furrow on the ſide; and about the middle of September, when it is generally full ripe, it is of an olive colour, with a little white powder upon it. The pulp is yellow, eats firm, ſticks to the ſtone, and is full of a pleaſant juice; its ſhoots are much the colour of thoſe of the green Gauge, but not ſo ſtrong, being longer jointed, neither does it make ſo healthy a tree, yet it bears well againſt a wall, &c. but I don't think it proper for a ſtandard.

The Roche-Corbon is a middle ſized plum, round in its make, and but little furrowed; is of a dark red next the ſun, but the other ſide is pale, covered with a bluiſh powder: the ſtalk is long and ſmall; the pulp is of a fine yellow, with plenty of pleaſant juice, melts in the mouth, and parts from the ſtone which is long. It ripens gradually from the middle of September to the end, and bears plentifully againſt a wall, or in an eſpalier; but the fruit generally wants thinning, for if too many be ſuffered to grow upon a branch, they ſpoil one another.

The plum called the red Spaniſh damaſk, and ſometimes the French damaſk, is a middle ſized plum, of a round make, has a red colour well powdered, the ſtalk is ſhort, the fleſh is yellow and firm, and if not too full of fruit, has a very rich juice, and parts freely from the ſtone. It ripens againſt a wall in the latter end of September;

tember; but I have not ſeen it a ſtandard.

The little green damaſk plum is almoſt round, but little powdered, has a green fleſh when ripe, but does not freely quit the ſtone, and the juice is of a pleaſant flavour. It is, for its colour, curious in ſweet-meats; and bears well upon a ſtandard, or otherwiſe, with proper cutting, &c. It ripens in the latter end of September.

The Mangeron is a middle-ſized plum, of a round make, with a blackiſh colour ſtrongly covered with a blue powder; the pulp is firm, and parts from the ſtone; and tho' it is not ſo full of juice as ſome others, yet it has a very pleaſant flavour. It ripens towards the latter end of September, when planted againſt a wall; but I have not ſeen it any other way.

The red Imperial is a large plum, long and flat, with a furrow on the ſide; is of a pale red colour, covered with a white powder; the pulp is white, parts from the ſtone, and is better to dry then eat raw. It makes a very large healthy tree, and will bear plentifully againſt a north wall: I have not obſerved it planted any other way than againſt a wall of ſome kind or other. It ripens at the latter end of September.

The Reine Claude is ſomewhat long, of a middle-ſize, a yellow colour thinly covered with a white powder, and the ſide next the ſun is ſpotted with red; the pulp is firm, of a yellow colour, comes clean from the ſtone, and is full of a ſweet juice of an agreeable taſte. They ripen ſome in September, and ſome in October. I have not ſeen this kind any other way but againſt a wall, and there it bears plentifully.

The red and white magnum bonum plums are both very large in ſize, and ſhaped like an egg, a little furrowed on the ſide. They are neither of them very good to eat raw, but are both greatly eſteemed for preſerving; and I have known the white ſort when full grown, but not ripe, made uſe of for mangoes. They generally ripen at the latter end of September; their leaves and ſhoots are very large; they bear well either againſt a wall or in an eſpalier; but their horizontals require to be at a greater diſtance from one another than thoſe ſorts that are ſmaller.

The St. Catherine is a middle-ſized plum, ſomewhat long in its ſhape, and ſmall towards the ſtalk, is of a yellow colour with a thin covering of white powder, and the ſide next the ſun is faintly marked with red; the pulp is yellow, and full of a pleaſant juice, but adheres to the ſtone. It ripens at the latter end of September and beginning of October. It bears well againſt a wall, and in a fine ſeaſon I have known them dry upon the tree; but I can't venture to ſay that it will bear good fruit on a ſtandard.

The St. Julian is a middle-ſized plum, ſomewhat pointed at the ſtalk, is of a dark purple, or brown colour, and much powdered; the pulp does not open from the ſtone, tho' it is extremely well taſted, and dries well either by art or nature, if the ſeaſon is good, in October, which is the time of its ripening. I have known it againſt a wall, but no other way; yet I think it would do in an eſpalier.

The Imperatrice, which in Engliſh is called the Empreſs plum, is of a roundiſh ſhape, and a middle ſize; and of a dark blue colour on the ſide next the ſun, much covered with powder; the fleſh is yellow, and full of a pleaſant taſted juice; it is ripe in October, and bears well againſt a wall, or in any kind of dwarf.

There are many other kinds of plums, that are very uſeful for preſerving or baking; ſuch as the red wheat-plum, and ſeveral ſorts of damaſcenes; all of them bear very well on ſtandards; and I have given directions for their management in treating of orchards. If a hole of only four feet wide be prepared for them at the time of planting, they will thrive very well afterwards upon any ſoil that is dry; admit it is ſix or eight inches deep before it comes to any kind of rock, ſtubborn clay, or looſe gravel.

Of ORCHARDS.

SECT. I.

Of the Situation, and Soils proper for Orchards.

THE beſt ſituations for orchards are thoſe upon an eaſy declivity towards the ſouth, or ſouth-eaſt; or upon a level, well guarded from the ſouth-weſt to the north-eaſt points, with woods, hills, or buildings if poſſible, but for want of which elm hedges will be of ſervice, or elſe Scotch firs at ſix feet apart.

The ſhape or figure I would chooſe to have incloſed for an orchard is the ſame as that for a kitchen garden, and its boundaries to have the ſame aſpects. The ſame ſort of ſoil mentioned for wall-trees, is alſo beſt for orchards; but ſince it is not to be met with in all places, therefore, where the ſoil is defective, it ſhould be helpt with all neceſſary improvements that can be made at a moderate expence. There are few gentlemens ſeats, or even villages, where the ſoil is ſo bad, but that it may be rendered fit for the purpoſe, by proper management.

However, the moſt improper ground for orchards, and the leaſt capable of ſufficient improvement, is ſuch as lies ſo low that it can't be drained in the winter, but that the water will generally ſtand within a foot or leſs of the ſurface.

When a piece of land is fixt upon, for planting with fruit-trees, in the firſt place, if there is occaſion, it muſt be drained by the methods laid down for draining gardens; and then manured, in places where the trees are to be planted, the ſame as directed for borders, according as the nature of the ſoil requires; tho' not exceeding the depth of a foot, for either apples, quinces, plums, mulberries, almonds, or filberds.

SECT. II.

Of the Diſtances that Fruit-Trees ought to be planted from each other.

THE ancient manner of planting orchard trees hath been generally at the diſtance of eighteen or twenty feet;

but this is too near, for they require more room; for when trees are planted in this manner, the lower branches are ſmothered for want of ſun and air, and their ſtems become naked much too high, nor will they ever produce good fruit upon their under branches; for being deprived of the benefit of the ſun, by ſtanding too near each other, the fruit is never well flavoured, and always will be ſmaller, and much worſe, than when the trees ſtand thin; for in cloſe places the ſun's rays and the air has not free paſſage to take off the dew, which, by its hanging too long upon the fruit, becomes very prejudicial to it.

The loweſt claſs of trees ſhould be planted on the ſouth and eaſt ſides, or on the ſouth-eaſt and ſouth-weſt, if theſe be the ſides of an orchard; for if the talleſt kinds are planted in theſe places, they will injure the other trees, by depriving them of the benefit of the ſun.

I ſhould chooſe to plant the north-weſt, and north-eaſt ſides, or north and weſt ſides, if the orchard ſo lies, with cheſnuts, at twenty feet apart; for the nearer they are together, the ſooner they make a ſhelter for others, and at that diſtance they will make good timber, for which they are moſt valuable.

The next rows to the ſouth-eaſt, or ſouth-weſt, I ſhould adviſe to be walnuts, at thirty feet apart; but I think this is too little for their growing to be large trees; but I do it to ſhelter the apples or pears, which I propoſe next at forty feet apart, and a mulberry the ſame; then cherries at twenty-four feet apart, and on the ſide or ſides that is moſt to the ſouth, either plums, quinces, medlars, almonds, or filberds, at eighteen feet apart.

SECT. III.

How to prepare Soils for Orchards.

AFTER the places are appointed for trees, if the ground be graſs, tho' intended to be plowed or dug after planting, it muſt be par'd and burnt; and obſerve, there ought to be a fire upon every ſpot where the trees are to be planted.

This work muſt be done in the ſummer or ſpring, when the weather is dry; and, after that, the ground may be plowed, and ſowed with turnips early in the ſummer, and eaten off with ſheep in the autumn; which will make a greater improvement in the ſoil, than any other method will do, at the ſame expence.

But if the ground is intended for meadow, or to be paſtured with cattle, then there is no occaſion to pare more than a circle of about ten feet diameter, for each tree; and burn the turf upon the ſpot, as before directed.

If the ſoil is ſtrong clay, then before the trees are planted, it muſt be often turned over, and well mixed with lime, coal-aſhes, ſea-ſand, or its own ſoil burnt, in ſuch proportion as directed for wall-trees, but not more than a foot deep; for, if the ground is prepared any deeper, the trees will ſettle with the light earth, till their roots be too much below the ſurface, and be thereby confined to the ſpace of ten feet, which was prepared for them while young, but they are deſigned to extend their roots further when full grown.

If the ſoil is of a tender open nature, and free from gravel and ſtones for the depth of a foot below the ſurſace, there requires nothing more after burning, but to dig it over about the compaſs of ten feet diameter for every tree; mixing with it a little ſoot, and picking out all roots of twitch-graſs and other perennial weeds.

Where the ſoil is chiefly gravel, and full of pebbles, or a rock too near the ſurface, take away the ſtony barren part thereof about the depth of a foot, and to what remains add good ſoil in quantity proportionable to that taken away, and of ſuch a ſort as directed for wall-trees.

Though I have directed to dig and manure the Ground only a foot deep, yet its natural quality ſhould be examin'd deeper, and where you meet with water or ſharp ſand, within a foot and a half of the ſurface, it is not proper for the cherry, walnut, cheſnut, medlar, and pear; and the fewer of theſe kinds of trees are planted in this ſort of ſoil, the better; but either rock or clay will ſuit them very well.

If the ground deſigned for planting with fruit-trees has been dug or ploughed, ſo as to render it poor; then either ſoot, lime, &

&c. muſt be mixed with the ſoil, as its texture requires, and in quantity proportionable for the ſpace, as before preſcribed, in this ſection, for each tree.

SECT. IV.

Of Planting Standard-trees, and Pruning them at the ſame Time; with their proper Order the firſt Summer.

THE ſeaſon for planting ſtandards, and the method of cutting their roots, are the ſame as for wall-trees; but their heads are cut differently, both as to the time and manner of doing it, and may for conveniency's ſake be cut before they are planted.

The ſhapes proper for their heads are repreſented by Plate VII. and the different figures ſhew the intended ſhapes of a tree at various ages.

Before removal, trees are generally furniſhed with more branches than are required after; and as their number of ſhoots are uncertain, I have not attempted to ſhew any thing of that ſort in the

Plate; but when a tree happens to have too few, then ſome muſt be ſhortened, in order to increaſe their number; if there are many bloſſom-buds upon the horizontals, take part of them away, and likewiſe all that proceed from the ſtem.

Fig. I. repreſents a tree, whoſe head is ſuppoſed to be only one year old, with all the branches ſhortned, but none taken out, which is the cuſtomary way of pruning at the time of planting, and which cauſes trees, when they are old, to have too many ſtrong parts, and to be full of old wood. Fig. II. repreſents a tree with branches two or three years old, and cut according to the common method, with all the branches ſhortened more than the length of the laſt year's ſhoots, and no other buds left on them but ſuch as are either prepared, or preparing to bloſſom.

But this method cauſes many new planted trees to be three or four years before they make any ſhoots. Fig. III. repreſents a tree with five branches, either one, two, or three years old, and cut after the method I practiſe, upon the head of a tree, whoſe ſhoots are not more than two feet long.

The branches left on are all at their full length; that at A is intended for an addition to the ſtem, and ſhould be one of the ſtrongeſt of thoſe ſtanding upright; but the other four muſt be choſen as much in a horizontal poſition as their natural manner of growing will allow.

When a tree has but three horizontal branches, one of them muſt be cut near the bottom, yet ſo as to leave two plump buds; and if there are but two branches beſides the ſtem, they muſt both be cut in the ſame manner.

The trees are to be planted, and their roots covered, as directed for wall-trees; but with a hill of earth quite round their ſtems, made flat at top, and of a greater compaſs than the extent of the roots; then let them be ſtaid, ſo as to prevent the winds from looſening their roots, which may be done by fixing in the ground two ſtakes or piles, of about three inches ſquare and ſeven feet long, one on the north, and the other on the ſouth-ſide of each tree, at the diſtance of a foot from the tree; then to the tops of theſe piles, nail two ſtrong ledges, on each ſide the tree one; but before this is done, the tree ſhould be wrapt about with bandages, at the places where the ledges would otherwiſe touch it, made of hay or ſtraw, to prevent the ledges from galling it, and to confine and keep it ſteady: there ſhould alſo be four other ledges nailed, two on each ſide, one about a foot from the ground, and the other half way between that and the top, and then draw in betwixt them either thorns or goſs, ſo as to prevent hares, or ſheep, or any thing elſe from injuring them, by pealing off the rind; but if horſes, beaſts, or any large cattle, are ſuffered to paſture in the ground where young trees are planted, then they muſt be guarded in the following manner, over and above what has been already directed, till they are grown ſo ſtrong as not to be bent or ſhaken by the force of cattle rubbing againſt them.

Set down about every tree, three poſts, with three lengths of rails in a triangular form, at ſuch a diſtance as will prevent any cattle from reaching it.

Oak wood is the beſt for this purpoſe, it being of the longeſt duration.

The earth about the roots of young trees ſhould be kept conſtantly moiſt the firſt year after planting, from the beginning of March to the end of September; but the water ſhould never be poured in great quantities near the ſtem, for that is ſubject to waſh away the earth.

The beſt method is to make a little trench round the tree, at the diſtance of a foot, and pour the water into it; by this means the water will ſooner reach the more remote parts of the root, where it is moſt wanted; and the ground round the tree for the ſpace of ten feet, ſhould alſo be kept clear of weeds, or any kind of vegetables.

All branches that put out from the ſtem muſt be rubbed off at their firſt appearance; and if ſuckers put up from the roots, they muſt be diſplaced likewiſe; or, if any ſtrong and upright branch appears from any of the horizontals, it muſt be cut away, except the greateſt part of the horizontal be dead which they proceed from, or either of the horizontals next to it, then a ſtrong branch muſt be preſerved to make good the deficiency.

SECT. V.

Of Pruning a young Standard Apple-Tree, &c. till it comes to the Height intended.

I Have obſerved, that generally after orchards are planted, the benefit that might reaſonably be expected from them is in ſome meaſure prevented, by neglect of cutting and dreſſing; which ſhould be done at leaſt every winter, as ſoon as the trees have ſhed their leaves; and therefore will here give proper directions for managing all kinds of orchard-trees; and firſt of apples, this ſort of fruit being the moſt common in orchards, and of the greateſt uſe for baking, ſtewing, &c. as alſo for making cyder.

In order to make a tree healthy and bear good fruit, it muſt be kept thin of wood, and equally ſo in all parts of the head, as near as poſſible; for, by this means, it will receive the moſt benefit from the ſun.

Fig. 4. repreſents a tree when full-grown; and the way to bring a tree to ſuch a ſhape, is to make a ſtrait ſtem, and preſerve upon it four branches at every place, where a new ſet of horizontals is required, as at A B C D, which ſhould not be nearer each other than two feet; and if the tree is of ſuch a nature as to produce a ſtrait upright branch for a ſtem, then all others but thoſe deſigned for horizontals, muſt be rubbed off at their firſt appearance; for all branches of a ſtandard fruit-tree ſhould grow in ſuch poſitions as thoſe of a ſilver-fir.

But if it is of a free growth, and the branches are more ſubject to grow declining than horizontal, the young ſhoots ſhould be all left upon the new part of the ſtem the firſt ſummer; for, if part are taken off, the others will grow ſtill more crooked.

The way to obtain a ſtrait ſtem in the latter ſort of trees, is to fix a ſtrong pole in the ground, and tie it in ſeveral places with liſts of cloth to the upright part of the tree, and by the ſide of the pole confine the center branch, till it reaches the height intended, which ſhould not be more than ſixteen feet from the ground; for, all kinds of apple-trees planted at the diſtance of forty feet from each other, have ſufficient room to extend themſelves horizontally.

There is one thing more requiſite to be obſerved in raiſing the ſtem; and that is, if it ſhoots more in one year than the ſpace required betwixt each ſet of horizontals, it muſt be cut in the winter at a proper length, and the lower buds rubb'd off, leaving only five at the top, ſuch as are likely to make ſhoots.

But when it is grown to the height intended, there muſt be only four buds left on, and the ſhoots proceeding from them kept in a horizontal poſition, which may be done by confining them to two ſmall poles fixed tranſverſely to the upright one; and when thoſe branches deſigned for horizontals grow too much upwards, they may be confined to a right poſition by the ſame method, provided that often bending them downward in the ſummer will not be ſufficient.

In ſuch manner a tree ſhould be confined, till the branches are ſtrong enough to ſupport themſelves in a proper poſition; and when the four firſt horizontals, I mean thoſe neareſt the ground, are become each a yard long, they ſhould every one have two branches preſerved, and trained, in the ſame manner as thoſe of the dwarf-tree, repreſented by Fig. 6. marked A A, and when theſe laſt come to the length of a yard, others muſt be ſuffered to grow from them in like manner as from the firſt; and as all the horizontals increaſe in length, ſo they ſhould alſo in number, by the rules given for the loweſt, as repreſented by Fig. 7. and never ſuffered to croſs each other.

If the horizontals do not increaſe faſt enough in length, then all the upright ſhoots proceeding from them muſt be taken off at their firſt appearance, and the longeſt of thoſe ſhoots near the ends, except that branch deſigned for the lengthening of the horizontal, for it muſt remain in its natural way of growing till it is two feet long; and if a tree either bears or bloſſoms plentifully, without ſhooting much, then great part of the ſtuds ought to be cut off in the winter.

When a tree does not want vigour, let all the branches continue till winter, then cut off all thoſe above ſix inches long, growing upright from the upper-ſides of the horizontals; and this ſhould be obſerved in trees of all ages, for no upright branches from thoſe parts ſhould be ſuffered to grow longer.

The branches of ſome kinds of apple-trees are ſubject to grow too much declining; but when this is the caſe, they muſt be ſuſtained in a right poſition by proper ſupporters, as was directed for thoſe branches that were too much upright; and all branches deſigned for horizontals, be they either ſeconds, thirds or fourths, as A B C D, in Fig. 7. they muſt all be ſo confined after they are two feet long, and whenever the extreme part of a horizontal becomes weak, the ſtrongeſt ſhoot near it muſt be preſerved for its place.

If in any kind of tree, after the branches are laid horizontally, they don't grow much in length, but put out ſtrongly near the ſtem in an upright poſition, then ſuch trees ſhould not have their branches confined quite flat, but ſomewhat aſcending, and at a greater diſtance from each other than thoſe that are in a horizontal ſhape.

In dreſſing of a young tree, great care ſhould be taken not to ſhake or diſturb the roots, nor break or ſtrain any branches, nor rub off any more buds than deſigned; for theſe miſchiefs often happen, by ſetting a ladder againſt the tree, before the ſtem is able to bear a perſon's weight upon it without bending.

Therefore a folding ladder, with four limbs to ſupport it, is moſt proper for this purpoſe; and a fine chiſſel, with a ſhaft of a length convenient for taking off the branches without climbing.

Where there is moſs upon the trees, it ſhould be ſcraped off very clean, and ſuch a hoe as is commonly uſed for onions is ſuitable for the purpoſe, with a long ſhaft for the higheſt branches.

SECT. VI.

General Rules for Pruning and Dreſſing Apple-Trees, of all Ages, that have been regularly trained.

ALL dead branches or ſtuds muſt be cut off cloſe to the part they proceed from, and the parts cut ſhould be made very ſmooth, that the wound may ſooner heal, and where large branches are taken off with a ſaw, the parts thus cut ſhould be pared with a ſharp chiſſel in ſuch a manner as that the wet may deſcend from them; for when they are left either horizontally, or with an uneven ſurface, the wet will continue upon them, till it penetrates into the wood and decays the whole tree.

The branches ſhould not be ſuffered to croſs one another, nor touch at their extremities.

The moſs ſhould be clean ſcraped off in the winter, and where there is any cankered rind, it muſt be cut away to the quick, and all old bark ſhould be clean pared off, for it harbours inſects, as alſo do the dead leaves that hang upon the trees, wherein the eggs of caterpillars are often concealed, and ſhould therefore be taken off and burnt.

Where new horizontals are wanted, young ſhoots ſuitable for that purpoſe ſhould be left, and confined with bandage to their proper places; but if there are no young ſhoots, then cut out a piece of wood with a chiſſel, where one is required to grow.

Fruit is generally ſmall upon old ſtuds that have born a long time, which ſhould therefore be taken off, as alſo ſome of the ſhorteſt horizontals, and young ones preſerved to be in their ſtead; by which means, large fruit may be produced upon old trees.

The common way of applying manure to the roots of trees, is to do it cloſe to the ſtem; which is but of little ſervice; for the moſt uſeful roots of large trees are at a conſiderable diſtance; and the beſt method of manuring orchards, is to ſtrew all over upon the ſurface of the ground the quantity of a buſhel of ſoot for every large tree, and ſo in proportion for thoſe of a ſmaller kind, as ſoon as they have had their winter order of cutting and dreſſing.

It is alſo neceſſary to keep orchards clear from the roots of nettles, burdocks, mallows, or any ſtrong growing weeds; for they deprive the trees of a great deal of moiſture.

SECT. VII.

Of Pruning of Orchard Pear-Trees.

SUCH pear-trees as are proper for ſtandards are mentioned in the catalogue given of this kind of fruit, and what hath been ſaid in regard to the management of apples, muſt be obſerved alſo for pears; for their nature of growing and bearing is nearly the ſame, whereby there is no occaſion of different methods of pruning; but the ſorts that are naturally of a vigorous growth may be ſuffered to grow twenty feet high.

SECT. VIII.

Of the Ordering of Cheſnuts in Orchards.

THE cheſnut being commonly planted more for ſhade and the ſake of its timber, than for the value of the fruit, (for they don't always ripen in this climate) ſhould for that reaſon have a ſtrait ſtem, of as great a length as can poſſibly be procured, and branches left on it at the ſame diſtance as directed for the horizontals of apple-trees; but there is no occaſion to confine them to any particular order, for they may be ſuffered to grow according as they are naturally inclined, without any reſtraint; and where the timber is more valued than the ſhade, the ſtems may be dreſſed to a greater height before any ſtrong branches are ſuffered to grow upon them.

SECT. IX.

Of the Ordering of the Walnut-Tree.

THE walnut is a tree valuable both for its fruit and timber, and the more knotty it is, the more beautiful; ſo that the ſtem is not required to be either very long or very ſtrait; but the ſide or horizontal branches proceeding from it, ſhould be at regular diſtances and heights from one another, which is greatly to the advantage of its bearing.

The extremities of the young ſhoots are ſubject to be killed in the winter; when this happens they ſhould be taken off to the quick, and the branches kept from croſſing one another, which is the chief-order required, till they are large enough to bear; and ſhortening the branches is of great ſervice in making them bear more plentifully; and ſince beating them with poles is an expeditious method for tall trees, I therefore recommend this practice for ſuch trees, whether there be fruit or not.

SECT. X.

Of the Pruning of Standard Mulberries.

WHERE orchards are paſtured with large cattle, there is a neceſſity of having the branches of fruit-trees high, to prevent them from being damaged; otherwiſe the mulberry is much better to have its branches near the ground, for then the fruit is gathered with more eaſe, and leſs liable to be blown down by the winds.

The mulberry ſhould have horizontals drawn from the ſtem, in the ſame manner as the apple, and all dead wood and old branches muſt be taken out, and new ones raiſed where there is occaſion; but ſuch branches as are deſigned to produce bearers muſt never be ſhortned, for they bear their fruit upon branches of the ſame year's growth, proceeding from three or four buds near the extremities of the laſt year's ſhoots; and ſhould the ends of theſe ſhoots, together with the buds be taken off, they would not produce any fruit, though they would ſhoot very ſtrongly from other buds.

SECT. XI.

Of the Pruning of Standard-Cherries, Plums, Almonds, Quinces, Medlars, and Filberds.

STandard-cherries ſhould be treated in a manner ſomewhat different from apples, for they bear their fruit upon younger wood, and therefore ought to have their bearers often renewed, and the old ſtuds and ſhorteſt horizontals taken away, and new ones procured in their room; which may eaſily be done, where trees have been trained up with ſtrait ſtems and regular horizontals, when young.

Cherry-trees don't require to have their horizontals above half a yard diſtant one ſet from another.

The duke-cherry is naturally one of the beſt bearers, but ſhort-lived, unleſs the branches are often renewed, and kept in a horizontal poſition; alſo the moſs ſhould be clean rubbed off every winter, but at the ſame time, great care muſt be taken not to bruiſe the trees, for that cauſes them to gum, which is of bad conſequence.

The plum and almond muſt be managed the ſame in every reſpect as the cherry.

The quince and medlar muſt be ordered like the apple, with this difference only, that their horizontals need not be more than fifteen or ſixteen inches aſunder.

Filberds require nothing more than the former, and to have their branches kept out of the reach of cattle, and all the dead ones taken out in the winter.

SECT. XII.

Of young bearing Standard-Apples, that were planted too near each other.

THERE are ſome young ſtandard apple-trees that were planted no more than eighteen feet apart, and at the ſame time had all their branches ſhorten'd, and none taken out, yet bear very well.

But this method of cutting and planting is of ill conſequence to the trees when they grow large, for then they deprive each other of the benefit of the ſun and air; and the branches likewiſe of one tree injure the branches of another tree the ſame way.

But if the trees are moveable ones and of good kinds, theſe grievances are eaſily to be helped, by tranſplanting ſuch of them to diſtant places as incommode or croud the orchard, and thoſe that are but ordinary ſorts may be burnt; and both thoſe that are deſigned to remain, and thoſe that are to be ~~[illegible]~~ transplanted ſhould have their branches thinned in the winter, but not ſhortened; aud ſuch healthy ones muſt be choſen to remain, as will the earlieſt repreſent the ſeveral figures in Plate VII. that are deſigned for the ſhapes of a ſtandard-tree at different ages.

There ſhould be one of the ſtrongeſt, and moſt upright branches choſen to form the upper part of the ſtem, if there be a ſufficient number of horizontal branches growing from it, at or near ſuch places as they are required, that is, each ſet to be about two feet above each other, and at each place four; but, if they are not in a horizontal poſition, they may be helped by a proper bandage.

But if the ſtrongeſt and moſt upright branch be not ſo well furniſhed for that purpoſe, as another which is leſs upright, then the former muſt be taken out, and the latter confined by bandage to a ſhape as much upright as may be, by the rules given for thoſe newly planted.

Immediately after their leaves are ſhed, is the propereſt time for thinning of branches, and every part of a tree muſt be examined;

mined; and, by cutting out ſome, and tying others to poles, the tree muſt be brought as near as poſſible to the intended ſhape, and if in ſome places there is too great a vacancy betwixt the horizontals, and in other places too little ſpace between each other, they muſt be brought to more equal diſtances; if they be too ſtrong to bend in their whole ſubſtance, they may be cut half through, and then tied to poles that are properly fixed, to ſupport them in ſuch poſitions as they are deſired to grow in.

Obſerve, that the parts cut muſt be left with a very ſmooth ſurface, to prevent the wet entering in, which would cauſe the tree to decay: a hand-ſaw is a ready inſtrument to cut off large branches, but it leaves a roughneſs, which ſhould be taken off with a ſharp chiſſel.

Before the ſaw is uſed, there ſhould be a large cut made on the under ſide of the limb intended to be taken off, to prevent the bark being tore from the ſtem, when the weight of a branch cauſes it to break off before the ſaw is quite through.

The branches that are taken off muſt be cut cloſe to the ſtem or horizontal which they grow upon; for if there be a ſtump left, the wound does not ſo ſoon heal over as it would if it made a ſtraight line with the bark on each ſide of it.

SECT. XIII.

Of Replanting ſuch Standard Apple-Trees as are come to bearing.

A Tree of ſix inches diameter may be replanted with great ſafety, admit it be a healthy one; but I chooſe to omit doing it the ſame year its branches were thinned, but prepare the roots and heads for the purpoſe, and let it remain there till the next winter.

For a tree of ſuch a ſize, there ought to be roots left of a yard long on every ſide, and to ſecure ſuch there ought to be a trench made at that diſtance all round it, and ſo deep and wide as a perſon may work conveniently in it, to cut through every root with a hatchet, ſo that the tree might be taken quite out, if deſired.

But when it is thus prepared, I would only have it thrown upon its ſide, and all the roots cut ſmooth either with a chiſſel or knife, according as their ſtrength requires;

and in ſuch a form that the cuts ſhall be flat upon the ground, when the tree is planted upright.

Apple-trees are not ſo ſubject to have a tap-root as pears are; but when ever one of them is met with, I would not adviſe to have them left much more than a foot long; and after the tree is raiſed right up, as it ſtood before in the hole, let there be good earth put quite round it, ſo as to fill up the trench level with that upon the roots; then let the tree remain there a year; but if the ſummer proves dry, give water to the roots, and likewiſe rub off all young branches that may poſſibly put out near thoſe places where others were cut off, or from any other parts of the tree where they are deemed uſeleſs.

In the ſummer after the trees have been cut, it will be very proper to prepare the places where they are to be planted, in ſuch a manner as was directed for young orchard-trees; but theſe having large roots, the holes muſt be made deeper than thoſe for ſmaller trees, and the longer they are made before the time of planting, the better order will the earth be in. The ſeaſons for removing trees have been appointed before, and it is proper for thoſe of any ſize, but large ones require the more perſons to aſſiſt, becauſe of their weight; but the roots being all cut through before, makes the digging part eaſy the ſecond time.

When the weather is not froſty, the trench muſt be opened as before, but great care muſt be taken to preſerve the young roots that are made from the ends of thoſe that was cut the laſt year; and if the weight of the tree with the earth upon the roots be more than can be carried upon leavers, by as many men as can conveniently walk one before another; then the tree muſt be taken up with a fern, and placed right upon its roots, either on a ſledge, or a carriage with wheels about a foot high, and drawn by horſes to the place prepared for its reception.

Care muſt be taken, in the time of removal, to keep the roots from being dried, or damaged by froſt; and before the root is put into the hole, let the depth of both be meaſured, leſt the tree ſhould be taken up again for want of being placed at a proper depth.

I would have about ſix inches deep of freſh earth under the roots, which will ſettle in a few years; and for that reaſon the uppermoſt roots ſhould be placed at the time of planting even with the ſurface of the ground, and then the trench muſt be filled up with earth round them, and gently trode till all the roots are covered over about ſix inches.

The baſon of earth round them ſhould be about eight feet wide, and near a foot lower at the center than on the ſides, and covered with ſuch manure after as is ordered for wall-trees; and let them have water, when the weather is dry, and likewiſe tied ſo to ſtakes as to prevent their roots being moved by the winds; then there will be no fear of good ſucceſs.

After their removal, their branches muſt be ordered as thoſe that are grown to the ſame height, tho' planted young, according to the rules laid down for that purpoſe.

SECT. XIV.

Of Standard Apple-Trees that don't bear much good fruit.

BArrenneſs in apple-trees, or the want of good fruit, proceeds from different cauſes; many of which may be removed, if the trees are of good ſorts, and the land in which they grow be either proper, or capable of being made ſo.

That is the firſt thing neceſſary to be obſerved; and if manures are wanting, ſuch ſorts muſt be applied as the nature of the ſoil requires, that is, for ſandy-land apply ſoot, or pigeon-dung, and for ſtrong clay, lime or coal-aſhes: cover the ground over for the ſpace of ten feet round the ſtem, of each tree that is deſigned to remain; lay it about a quarter of an inch thick, and when the trees are properly cut, let the ground be dug over in ſuch a thin manner as not to cut the roots. If a tree is covered with moſs, or makes large ſhoots in the ſummer, which canker and die at their upper ends in the winter, it is a ſign it is planted too deep, or elſe the ſoil too wet in which it grows.

The moſs muſt be ſcraped off; and if it is too deep planted, and a moveable tree, the branches and roots ſhould be cut as before directed; then take it up with a fern, if large, and lay earth under the roots, till the upper ones be even with the ſurface of the ground; then make a hill round the ſtem, in proportion to the length of the roots, that is, about a foot broader than what they extend, and confine the tops to ſuch ſtakes as its ſize requires.

If the ſoil be too wet, and there is a deſcent to any ſide, let there be drains made to it (betwixt each row of trees) about half a yard deep, and lay faggots in the bottom, about a foot thick; then place the ſods over them, with the graſs uppermoſt, and the remainder of the earth may be ſpread over the other graſs ground. If a tree be covered with moſs, and bloſſoms plentifully, without making much length of ſhoots, but does not bear much, or the fruit but ſmall, without being ſhaded by others, then there is a neceſſity of thinning the branches, and ſcraping off the moſs, the ſame as though the tree was to be removed.

Sometimes a tree that is planted too deep, in good ſoil, will ſhoot ſtrongly, but not bloſſom much; if it be not large, raiſe it higher; or take off the ſoil, till the upper roots are covered no more than an inch thick with earth.

If a tree ſhoots vigorouſly, and is planted a proper depth, and at more than thirty feet diſtance from any other, the reaſon of its not bloſſoming muſt then proceed from its own branches being too cloſe to one another, and ſometimes more than one of them grows in an upright poſition; if this be the hinderance to its bloſſoming, the branches muſt be properly thinned, and all thoſe that are left, except the ſtem, muſt be confined to a level poſition. After this is done, if the tree does not bloſſom, but continues too vigorous, I would then chuſe to have all the roots cut quite through, about a yard from the ſtem; but let the cuts be on the underſide, and be made ſmooth with a knife or chiſſel.

If a tree makes ſhoots, and bloſſoms well, but does not bear, or that the fruit drops off before they are half grown; then either bad ſituations, froſts or caterpillars are the cauſe, and for the remedy there are directions given in another place.

N. B. What has been ſaid in this place upon ſtandard apple-trees, are proper rules to be obſerved for all kinds of orchard-trees.

F I N I S.

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